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THERAPEUTICS AND MEDICINE

CHAIRMAN'S ADDRESS

ROBERT L. LEVY, M.D.

NEW YORK

On the physician have been placed various burdens of responsibility. As a disciple of Aesculapius, his chief function is to minister to those who are ill. In addition, it is expected of him that he shall investigate disease, devise methods for its prevention and treatment, and that he shall teach to a new generation the current knowledge of his subject. In its broadest sense, then, medicine embraces many fields of activity.

Savage man regarded disease as due to the work of evil spirits, and the art of healing was in the hands of the medicine man, who functioned as priest and sorcerer by virtue of particular powers attributed to him. Experience soon developed special talents in herb-doctoring, bone-setting and crude surgical procedures in certain persons, who employed their abilities as a means of livelihood. Observation of cause and effect, casual at first, but later purposive, built up a gradually growing body of useful information. And so, initiated by a desire for self-preservation and freedom from discomfort, and based at the start on superstition and empiricism, medicine developed as an art and a science.

There are those who would separate the art from the science of medicine, assigning to the practitioner the care of the sick and to the investigator the task of advancing the borders of knowledge. The proponents of this point of view maintain that practice is largely empiric, whereas science, in its restricted sense, is exact because it is a product of the experimental method. But, in the words of Claude Bernard, "fundamentally all the sciences began with empiricism, that is to say, observation or chance experience had to form the first period." As the nebulous realm of speculation is gradually encroached on by a growing mass of fact, the concept of any discipline becomes more clearly defined. In the light of human understanding, scientific truth is not fixed; the doctrine of today must be modified or discarded, as the result of tomorrow's experience.

In the domain of the complex biologic sciences, inability to control the great number of variables in any given set of experiments often makes precision in the expression of the results extremely difficult. Progress in the study of the phenomena of disease necessarily has been slow. A methodology that would make possible a mode of attack has begun to be evolved only within comparatively recent years. It has now become feasible to study in detail many of the problems of disease in patients at the bedside, rather than in lower animals in the laboratory. The technic is similar to that employed in the study of all other sciences, namely, induction based on observation, hypothesis and experiment.

The practicing physician is usually regarded as the exponent of the art of medicine. We are told that it is his function, primarily, to apply in the treatment of his patients such measures as have been found beneficial by his more scientific brethren. It is expected that in diagnosis and therapy the practitioner shall exhibit special skill. In this conception it is implied that, because of various attributes of heart and mind, certain persons are particularly qualified to care for the sick. The idea is at least as old as Hippocrates, for he counseled medical students in these words: "He who is going truly to acquire an understanding of medicine must enjoy natural ability, teaching, a suitable place, instruction from childhood, diligence, and time. Now first of all natural ability is necessary, for if nature be in opposition everything is in vain." Nowadays, a physician endowed with such natural ability is characterized as "a good clinician."

But it seems to me that one cannot separate art from science, and that art, in the sense of skill in application, should not be given special consideration in relation to medicine. As Swift has phrased it, "no artist can be very eminent without knowing the fundamentals of his art. The fundamentals of medicine rest in the science of medicine." In any field of endeavor certain attributes inherent in the individual are the determinants of success or failure. Heredity, training and opportunity undoubtedly play important rôles. But there is the sum total of the man as a whole which shapes his career. The qualities concerned defy precise definition. What inner spark inspired the gifted Leonardo to excel in painting, sculpture, architecture, engineering and natural philosophy? In the opinion of those best fitted to judge, he showed a firmer grasp of the principles of experimental science than did Bacon, who, a hundred years later, was fortified by a far wider range of actual experiment and observation. Why did it fall to the lot of Harvey to discover the circulation of the blood? What made it possible for Pasteur to obtain answers

From the Department of Medicine, College of Physicians and Surgeons of Columbia University and the Presbyterian Hospital.

Read before the Section on Pharmacology and Therapeutics at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 12, 1932.

to almost all of the problems which he set himself to solve? In science, in art, in music, in business and in public life we recognize all grades of achievement. To his chosen field each man brings a combination of characteristics—mental, physical, emotional and social—which help to determine the measure of his attainments. It is the association of these personal qualities in a human being that enables him to express the "art" in his work. A science, after all, is built up of the added accomplishments of many individuals. There is art in medicine; but it is a fundamental component of medical science, whether this concerns itself with investigation or with the care of the sick.

It has already been stated that medicine had its beginnings in the desire of man to alleviate the sufferings of his fellows who were afflicted with disease. Therapeutics, then, may be regarded as the foundation on which was built the superstructure of medical science. Certainly, therapy is an integral part of medicine, and any scheme that aims to divorce these two retards the development of both.

The therapeutic aspect of medicine concerns itself with all of the procedures that may modify the natural course of disease. Such procedures are commonly carried out with the idea of alleviation or cure. But often the study of the effects of various manipulations throws valuable light on the phenomena of disease itself. Investigation in therapeutics is obviously essential for progress, and the rules for conducting it are the same as those which are applied to the pursuit of any other scientific problem. In therapeutics there is especial need for comparative experimentation in order to establish beyond question the relationship between cause and effect. When imperfect knowledge still prevails, empiricism in practice is permissible. But it is to be sanctioned only until the scientific method of examination by means of experiment has afforded either justification or condemnation. How often has understanding, based on fact, led to the discarding of remedies which generations of our forefathers, with the smug satisfaction of ignorance, have regarded as indispensable!

Not only the methods of therapeutic approach, but the individual case, must be considered in the light of scientific experiment. Each patient presents a problem differing from that of every other patient because of the individual idiosyncrasies that are inherent in living organisms. It is, accordingly, sometimes necesssary to follow the method of trial and error. But of one thing the physician should always be convinced in his own mind, namely, that the remedy tried will not be harmful. The desire to help inspires action. Yet not infrequently misdirected therapy, though well intentioned, causes more damage than would result from failure to interfere with nature's plans for repair.

In the management of human beings, personal relationships must inevitably play a prominent rôle. Consciousness on the part of the patient that his physician is thoroughly grounded in the principles of his profession favors the development of a receptive and cooperative state of mind. But this is not enough. The qualities that enter into the make-up of the personality, many of them only remotely concerned with scientific attainment, often exert a dominant influence. It is the combination of intellect and character that defines the therapeutic artist.

There has always been much talk concerning the value of experience. Medical experience does not consist solely in doing the same thing many times or in seeing a great number of patients. For one may see without perceiving, and one may observe with a mind that does not understand. Experience represents the result of thoughtful reflection on the phenomena observed and of drawing valid conclusions from them by the method of deduction. Such experience is accumulated by the purposeful coordination of one's own observations and by proper consideration of the work of others. A good physician is he who can apply in the individual case, in diagnosis and therapy, the knowledge and the wisdom that he has acquired. And when he can foretell with a reasonable degree of accuracy the outcome of a series of related events such as constitute the record of disease, then does he approach most closely to the ideal of scientific attainment.

In Latham's "Lectures on Diseases of the Heart," published in 1845, there appears this paragraph, which epitomizes admirably the creed of the practitioner:

> Medicine is a strange mixture of speculation and action. We have to cultivate a science and to exercise an art. The calls of science are upon our leisure and our choice; the calls of practice are of daily emergence and necessity. Science may minister to practice much or little. But whether science help us or fail us, whether its instrumentality be sufficient or defective, still we must act. We are bound to the constant endeavor of doing the best we can whether upon a perfect or an imperfect knowledge.

31 East Seventy-Second Street.

TUBERCULOSIS IN TENNESSEE

E. L. BISHOP, M.D.
State Commissioner of Public Health, Tennessee Department of Public Health
AND
H. C. STEWART, M.D.
Director of Field Studies of Tuberculosis, Tennessee Department of Public Health
NASHVILLE, TENN.

The Tennessee State Health Department five years ago embarked on a program of state-wide control of tuberculosis, with the establishment of mobile diagnostic units that carried facilities for diagnosis and follow-up care into every county in the state. The central and dominating idea behind this program has been to bring about finding every case of tuberculosis as early as possible and placing all cases found under adequate medical and nursing care. These clinics have not been merely receptive. They have not been attached to any great central institution or domiciled in any one county or town where applicants are given examinations. Rather they have been mobile in every sense of the word. With only the simple equipment of a portable x-ray machine and the human resources of trained physicians and nurses, these clinics have gone out into the byways and found the cases. The best work, of course, has been done in the counties with full-time health personnel where the clinics are carefully organized in advance by the county health officer and nurse, with the nurse doing the follow-up work as part of her generalized nursing activities. In the unorganized counties (50 of them) a corps of 6 field nurses has

Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 11, 1932.

performed as much of the same type of work as is possible with such a small staff. The volume of work performed by the 3 clinicians, with the aid of the staff nurses in unorganized counties and the health unit personnel in organized counties, has been unusual. In the first four years 1,794 clinics have been held, 28,131 examinations made by the clinicians and 5,243 positive cases found and brought under the active direction of their personal physicians. Five years is a short time in which to measure results of such a program, and such measurement will not be attempted in this discussion.

At the time this program was started, the death rate from tuberculosis in Tennessee (144 per hundred thousand population) was so high in comparison with the general experience in the United States as to constitute a definite challenge to the health agencies. The reason for this divergence in mortality rates needed to be sought out, and the differential factors removed, as far as possible. This aim has been constantly kept in mind in every phase of the Tennessee program, that is, the finding out of what conditions exist here that are responsible for the high incidence and death rates for tuberculosis. On the way it is hoped that some light will be thrown on some unsolved problems in the epidemiology of tuberculosis. In organizing the field case-finding clinics, every type of lead to new cases that offered promise has been followed out in the various counties. Death records were used as the most evident and easily accessible lead to other cases in the same family. Cases diagnosed and reported by physicians have been used in a similar way. Tuberculin testing among school children is constantly being more extensively used in Tennessee, and as rapidly as possible the positive reactors are being followed up in the home. In whatever way the entry into the family has been obtained, the attitude has been that tuberculosis is a familial disease and one case should lead to a search for others by a complete examination, including roentgenologic study of every member of the family. This has led to the finding of the type of case in which the best results can be expected, namely, the early or minimal case.

In 1931 the tuberculosis death rate from tuberculosis (all forms) in Tennessee was 109 (about 97 for pulmonary tuberculosis alone). This rate represents a continuous trend downward from the rate of 198 for 1917. It still remains so high as to place Tennessee near the top of the list of states of the Union for tuberculosis mortality. This unenviable preeminence has led to the establishment of the state control program already sketched, but this activity is only a beginning. A search for basic causes was clearly indicated in order that control activities might be extended. The clinical service with a heavy and exacting schedule has kept careful records and is adding much to our increasing perception of the factors involved. In addition to this, a more careful and more concentrated study in a smaller area appeared necessary. With the securing of financial aid from outside sources, such a study was begun and has now been under way for two and one-half years.

At the start this special study had mapped out for it a more intensive program than was possible in the control clinics, with their necessarily rapid shift from county to county. Its activities were limited for a year at a time to a single county, while most careful epidemiologic records of every family studied were kept. These records, in addition to clinical and roentgenologic examinations, economic, environmental and occupational circumstances, have been especially concerned with the history of exposure to tuberculosis. As far as possible the date of establishment of each household has been ascertained, and the number of years that each member of the family spent therein has been recorded. Then, with the record of onset of tuberculosis in any member, the years of exposure of every other member can be calculated. Life tables are being worked out with expectancies calculated for every degree of exposure. These results will be published later.

GIBSON COUNTY STUDY

The locations of the special study of tuberculosis in Tennessee were originally planned to be one county in each of the three grand divisions of the state, so chosen as to obtain representative agricultural and industrial, urban and rural groups characteristic of each area. During the first year Gibson County in western Tennessee was studied, an area predominantly agricultural, with about one fourth of the inhabitants of the Negro race.

A study of the mortality reports from Gibson County brought out some interesting and useful information. First, the death rate from tuberculosis in age groups over 40 in the white population is markedly elevated over that of the United States registration area as a whole, an excess not so marked in other age groups. In females this elevation begins earlier and attains a higher level than in males. Also, the maximum death rate from tuberculosis occurs in an older age group than in the United States registration area. These differences can be shown also to hold for the state as a whole, and Gibson County therefore shows in this a miniature of what takes place in the state as a whole. In striking contrast, when the colored population is considered, no such age and sex variation from the general experience is noted. The explanation of this phenomenon is not yet clear and is being given further study.

Tuberculin testing of Gibson County school children showed positive reactors to constitute 56 per cent in the age groups from 5 to 19 years. This, for a rural area, is strikingly dissimilar to the finding of 10 per cent in one similar New York rural county,[1] and indicates a markedly greater prevalence of infective cases in Tennessee.

Careful family and individual epidemiologic histories were assembled on home visits to 265 tuberculous families and all available family data recorded, especially with regard to exposure to tuberculosis. The study also included about 100 families as controls, with the idea of discovering any differential factors that might be responsible for the tuberculous state in one and not another family. Each person had clinical and roentgenologic study and a tuberculin test. Altogether, 125 deaths from tuberculosis were the leads that resulted in the complete study of as many families. These represent about one fourth of the deaths from tuberculosis occurring in the county in the ten years, 1919 to 1929, and are considered a fair sample. In addition, 140 patients with their families located through morbidity reports were included. For obvious reasons it was necessary to limit activities of the study

1. Korns, J. H.: Tuberculous Infection Among School Children in a Rural Area in New York State, Am. Rev. Tuberc. 24: 534 (Nov.) 1931.

unit at some point, and the study of tuberculous families was therefore confined to the group thus delimited.

A brief summary of the findings from the study of this group of families and individuals is given here. Again, well over one half (59 per cent) of all deaths of white persons from tuberculosis were in those over 40 years of age, while in the colored race only 22 per cent were in those over 40. This is not a surprising finding in the colored race, but it is surprising that nearly one half of the colored patients found (44 per cent) were over 40 years of age. A similar percentage for white persons was found to be 32.

If the individual leads or introductory cases or deaths that led to the study of each family (these are called basal cases) are considered, there was a history of tuberculosis in one or both parents in 39 per cent of the 111 basal cases in white persons and in 35 per cent of the 106 basal cases in colored persons. These findings afford good evidence regarding the importance of the parent as a primary focus of infection. The association of parent and child is not occasional but continuous. With these facts in mind, should we not treat the prevention of tuberculosis from a point of view more closely approximating that which affords a guide in dealing with such diseases as diphtheria?

Of all patients found in all families studied, about half gave a definite contact history of exposure to tuberculosis. Most of the exposures to nonparental cases of tuberculosis began after 30 years of age. Fourteen per cent of white and 28 per cent of colored patients gave such a history.

The effect of household association with cases of tuberculosis was also studied. One thousand and ninety-five such associates were examined in Gibson County. In the age group under 5 years about one half of those examined in the clinics exhibited some evidence of tuberculous infection. Naturally this percentage increased with age. Eighty-five per cent of adults associated were found infected. In every age group the proportion of infections was higher in the colored than in the white race. This is as would be expected from what is known of the difference between white and colored persons as regards living conditions and the pathology of tuberculosis. The results of tuberculin testing among school children were studied as an index of infection in the county at large. The Mantoux intracutaneous test was used in 2,900 children, about one fourth of these being colored. When comparison was made of these tests with the results of study of children in the family groups, it was seen that children in household contact with tuberculosis had a materially higher per cent of infection than children in the same age group from the general population.

In studying the severity of infection in household contacts, the findings obtained by physical examination plus roentgenologic examination in 335 white and 491 colored persons were classified. From this it appears that from 20 to 25 per cent of household contacts in association with cases of active tuberculosis show tuberculous lesions classed as more or less active or dangerous. At the time the study was made, 2 per cent of the white contacts and 8 per cent of the colored contacts had died of tuberculosis. There is plenty of room here for speculation on the greatly increased death rate in the colored race.

A study was made of deaths in household contacts since the onset of disease in the basal case. Usually about four years had elapsed from the beginning of contact with the basal case to the date of record. The annual death rate per thousand contacts in 1,217 contacts was 1.7 for the white and 4.2 for the colored race. These rates are approximately twice the expected rates when the average experience in the county as a whole is considered.

These studies of the Gibson County data clearly reveal among other things the paramount importance of household contact in the spread of tuberculosis. As a result of the predominance of the fibroid type in adults, the conclusion seems warranted that the chronic fibroid cases are of outstanding importance in the spread of tuberculous infection in this state. They cannot be regarded as noninfective or unimportant.

The method of attack in control is clearly indicated. It is necessary to break the chain of long-continued contact between fibroid and other types of tuberculosis with the household associates, especially children. The first step in this solution consists in identifying the responsible infective cases. This the field clinics are doing as far as resources now make possible. The next step will be to institute a system or rather a combination of systems which, recognizing the infectious nature of tuberculosis, will make possible the isolation of these infective cases. For many years to come, the great majority of patients in Tennessee will perforce have to be treated in their own homes. Regional hospitals for certain types of cases will have to be provided as soon as this can be financed. Above all, a well balanced program that treats the problem from the point of view of mass control of an infectious disease seems to be the logical approach.

STUDIES IN OTHER COUNTIES

Following the period of activity in Gibson County, the study was carried on in Kingsport, in eastern Tennessee, an industrial city of 15,000 drawing its population from the Appalachian mountains, which surround it. Here was a situation differing in many details from agricultural Gibson County. Only about 600 Negroes were resident in this community, and practically every Negro had a complete examination, including roentgenologic study. Here, then, is a study of a complete Negro community, and not a mere sample of it. The Negroes live under relatively better economic conditions than prevail in western Tennessee, and the preliminary examinations of data collected has tended to show that tuberculosis in such Negroes tends to approach the same level of incidence and activity that is found in the white group. Nearly 10 per cent of these Negroes were found to have definite or suspected adult types of tuberculosis (4 per cent definite, 6 per cent suspected). The positive results with tuberculin testing were: 13 per cent in the age group under 5 years, 61 per cent in the 5 to 9 year group, 75 per cent in the 10 to 14 year group and 90 per cent in those over 15 years. Tuberculous infection precedes tuberculous disease. The magnitude of the potential tuberculosis problem in this Negro group is evident.

The data on both colored and white families from the Kingsport studies are now being analyzed and the results are to be published later. Life tables for the various age groups, comparing the chances of survival following exposure to tuberculosis at various ages, are being prepared and afford considerable information. For example, in Kingsport age-specific mortality among persons who were born in the households, who have lived in the households during the age period

under 1 year and who give a history of exposure to cases of tuberculosis has been found to be 7.5 per thousand persons. No deaths are reported among exposed persons who have lived in the households during the age period from 1 to 4 years. Thirty two and eight-tenths per thousand have died of tuberculosis among the group who have lived in the households during the age period from 10 to 19 years, and in the 20 to 39 year group there is noted a mortality of 257 per thousand persons. The total tuberculosis mortality at all ages, in the exposed group, is noted to be 16.5 per thousand, a rate more than double that in the non-exposed group. These rates presented in this manner are not very comprehensible. A detailed tabular account will be available at a later date.

The study of tuberculosis has now been established in Williamson County in middle Tennessee, where a third year of study is being carried forward. Here it is hoped that it will be possible to spend a number of years and observe more continuously and over a much longer period of time the manifestations of tuberculosis in an area and population restricted to one county. This is referred to as a longitudinal section study, with observations to continue indefinitely. Certain rechecks in other areas will be made from time to time, and it is hoped that facts brought out will be of such a nature that practical use can be made of them in the control program. The study group and the control group have a close and intimate association, being interchangeable in many respects. Any lead to better control that is indicated as of promise will be promptly put into effect in the control group. There is thus a definite union of study and control in the problem, and findings in the study are to be applied to the control program in such a way that a maximum effect of money expended may be obtained.

SUMMARY

The Tennessee program of control of tuberculosis as an activity of the state government had its beginning in 1927. This program has been essentially one of field activities, and during the first four years since its inauguration 1,794 clinics have been held, 28,131 examinations made and 5,243 positive cases of tuberculosis found and brought under the active direction of their personal physicians.

Special field studies of tuberculosis have been in progress during the past two and one-half years. Some of the findings in these studies have been presented briefly to indicate (1) the importance of household contact in the spread of tuberculosis and (2) the importance of chronic fibroid cases in the spread of tuberculous infection in this state.

The logical means of approach in the control of tuberculosis in Tennessee, in the light of information now at hand, would seem to center around the breaking of the chain of long-continued contact between patients with fibroid and other types of tuberculosis with their household associates. Eventually this would mean the establishment of hospitals or retreats for the care of the patient who is spreading tuberculous infection among members of the family and friends.

A continuing or longitudinal section study of tuberculosis is now in progress. It is hoped that this study can be carried on over a number of years. The relationship of the control and study groups is close, and findings of the study group can promptly be put into practical use in the control group.

ABSTRACT OF DISCUSSION

DR. HORTON R. CASPARIS, Nashville, Tenn.: The authors mentioned hospitalization in Tennessee. The control of tuberculosis has got to be placed on the medical profession. In Tennessee the state department is finding tuberculosis with all the means at its disposal. When tuberculosis is found, the state department does not tell the people what they have, or are supposed to do, but says "Go to your physician. He will tell you what we have found and what to do." That is the most important means of handling it and if one expects to shift the responsibility over a wide scale; and if one expects to accomplish anything, it has to be done that way. In starting a program anywhere for the same reason it is most important first to get hold of the physicians and familiarize them with what one expects to do. If one starts to discover tuberculosis and the patients begin to go to the physicians and ask them about it, and the physicians have not been told about the modern means or have not been familiarized with the means one is going to use to control it, they are likely to resist; but if one goes in and sees them first and tells them what one expects to do, not treat tuberculosis but find it out and turn it over for treatment and control, one will have little trouble in getting cooperation from the medical profession.

DR. J. N. BAKER, Montgomery, Ala.: The big problem of tuberculosis control is of absorbing interest to every administrative health officer. It is important, I think, to educate communities and to stress their responsibility, both financial and otherwise, in all measures of control and treatment. I desire to emphasize the authors' point as to the great importance, not only in the early diagnosis of this disease, but also in the value of proper control measures for the open case. After all, our greatest hope, so far as ultimate mortality is concerned, lies in the rescuing of the contacts, and thereby heading off actual breakdown in later life. In Alabama, where organized medicine within the state constitutes the state board of health, we find our traveling chest clinics a most valuable aid in tying in the profession to preventive health work, as well as stimulating a livelier interest in more accurate and earlier diagnoses in all disease conditions. Many expressions of appreciation from the profession throughout the state come to us of the value of this service both to the physician and to his patients. These clinics do not undertake any form of treatment but strive to establish a closer contact between the patient and the family physician. It is felt also that through these activities, aimed at earlier diagnosis, a stimulus should be given to the surgical aspects of the modern therapy of this disease, which, in selected cases, offer rich promise of cure, more particularly in the earlier case. In the absence of widespread sanatorium facilities, which few of the Southern states have, the wide-awake surgeon with even a small hospital at his disposal should find in this field opportunity for larger and more profitable service. Because of a dearth of hospital accommodations, we are endeavoring to stimulate interest in the local community and the local profession and to have them play a larger rôle in the solution of this problem. At present, with the aid of the Rockefeller Foundation, we have just begun an intensive study of our rural tuberculosis problem in a typical county of our state. This study will be carried on over a period of several years.

DR. HENRY F. VAUGHAN, Detroit: I should like to reemphasize the statement made by Dr. Baker concerning the need of integrating into the program the general medical profession. It is becoming more or less a hobby with us in Detroit to eliminate so far as possible the clinic activities of the department of health and construct the facilities of the medical profession in participating in our program of preventive medicine. We have done that in the field of diphtheria prevention satisfactorily until we have brought about, without any free clinics by the health department, immunization against diphtheria of 75 per cent of our population between the ages of 1 and 10 years. In tuberculosis we are attempting to do the same thing. We have 400 cooperating physicians, who are at present working as part of the health machinery of our community in finding early cases of tuberculosis, who have agreed to make these examinations at a definite price, at a definite time, in their own offices. It is working out satisfactorily. If one can integrate into the program a prepared medical

profession, it is extremely helpful. We prepared the medical profession, the cooperating physicians, by an intensive course of postgraduate instruction carried over a period of several months, so that the physicians are thoroughly acquainted with the modern procedure in finding early cases of tuberculosis, and the tuberculin test is being made in the physician's office, not in the school. The physician is making the physical examination, and either he himself, if he has the equipment, makes the roentgenologic study of those who give the positive tuberculin test, or he refers these cases to a group of cooperating roentgenologists for the more detailed chest study, and then the cases are referred back to the physician. This program results in an increasing practice of preventive medicine on the part of the general practitioner in contradistinction to curative medicine.

DR. H. C. STEWART, Franklin, Tenn.: There is little more I have to add to what has been said except to call attention to the fact that each of the speakers stressed the importance of the cooperation of the practicing physicians. That, of course, has been primary in the Tennessee program. When the program was first started, each county society was visited and the whole program was gone over with the physicians and discussed fully, after which invitations were extended to the state department of health to come in and conduct the work in that county. I was interested in what Dr. Baker had to say about the study project. Our own study is something along the same line, conducted in one of the Tennessee counties near Nashville, where there are available all sorts of facilities for consultation, and we feel that in a few years we shall be able to give out something of real importance.

THORACOPLASTY IN PULMONARY TUBERCULOSIS

GENERAL AND ECONOMIC CONSIDERATIONS

KENNON DUNHAM, M.D.
AND
ESLIE ASBURY, M.D.
CINCINNATI

Surgical aid has made a place for itself in the treatment of pulmonary tuberculosis. Phrenico-exeresis or evulsion of the phrenic nerve to paralyze one half of the diaphragm, thoracoplasty or the removal of a portion of the ribs and the cauterization of pleural adhesions to facilitate pneumothorax are established procedures with but slight operative mortality in well selected patients in experienced hands. Surgeons and internists are agreed to this extent; but there is still disagreement on the selection of patient and procedure, the technic of the operation and the causes of mortality and poor results. It is therefore important for experience to be recorded and end-results critically studied.

The publications on the subject in this country have been largely confined to special journals, and there are still ten contributions in foreign journals to one in English organs. This has probably been fortunate in that it has tended to prevent overenthusiasm on the part of the general profession during the formative period; but now that certain features of the work are on a practical basis, it is important that the general profession interest itself sufficiently to give patients the benefit of surgical adjuncts in the treatment of pulmonary tuberculosis.

Years of teaching against surgery in tuberculosis have prejudiced both the profession and the laity against thoracoplasty. The known excellence of the results in operations on tuberculous joints should give added impetus to collapse therapy for pulmonary tuberculosis. Extrapleural thoracoplasty and extra-articular arthrodesis are both mechanical aids to healing: thoracoplasty by closure of cavities and immobilization, and arthrodesis by immobilization and ankylosis. We know that tuberculous joints to be useful must heal without motion, and likewise, where indicated, permanent collapse of a lung is desirable to close cavities and prevent recurrence.

Most of the literature on surgery in pulmonary tuberculosis has been written by individual surgeons or internists. We feel that it is difficult to work out this problem independently. Too frequently the surgeon, often not thoroughly acquainted with the pathology and care of tuberculosis, and ignorant of the "feel" of the case which the internist develops after treating it for a long period, will advise unwise procedures; on the other hand, the internist without surgical consultation may beguile himself into radically conservative measures. Brauer [1] solved the problem by learning to do his own operations after establishing himself as a chest internist, but the cooperative effort of Key and Jacobæus of Stockholm is the ideal arrangement.

This paper represents a similar combined medical and surgical experience, based on the private work of both of us at the Good Samaritan Hospital, and on the work of one of us (Dr. Dunham) as medical director of the Hamilton County Tuberculosis Sanatorium. It is not a statistical study, but rather a general discussion. We feel that a combined point of view arrived at after cooperative effort is a more timely contribution.

ECONOMIC PHASES

In view of the proved value of surgery in the treatment of pulmonary tuberculosis, it is to be regretted that no facilities for it, in either personnel or equipment, exist in the great majority of public sanatoriums. Also, most of the large general private hospitals either have no means of adequately caring for cases of open tuberculosis or are afraid to admit them.

Brown [2] reported that, after nine years, eight of thirty-six patients on whom thoracoplasty had been performed were dead, while the remainder were either working or clinically well. These patients averaged less than a year of treatment after operation. Nine patients were followed who had been advised, but who had refused, operation. Six were dead, two were still under care, and one had recovered after five years of institutional treatment. Those who died averaged five years of care in a public sanatorium after the operation was refused. These figures are probably applicable to all institutions. Most of the patients on whom thoracoplasty should be done are notoriously persons who, without operation, live in a bedridden condition for years, a menace to all who come into contact with them. It is estimated that this group, though comprising a small percentage of the total number of patients, represents from 25 to 50 per cent of the patient days. It is evident that a great saving to the commonwealth would result if the sanatoriums were relieved of even a small percentage of the chronic cases. In a few states provision is made for sending these patients to the state hospital for surgical care. The patients at the Hamilton County Tuberculosis Sanatorium are being constantly examined by the internists and by the attending chest surgeon. If

Read before the Section on Surgery, General and Abdominal, at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 11, 1932.

1. Brauer, L., quoted by Alexander, J. S.: Surgery of Pulmonary Tuberculosis, Philadelphia, Lea & Febiger, 1925, pp. 27-30.
2. Brown, P. K.: Ann. Int. Med. 4: 361-371, 1928.

surgery is indicated they are removed to the Cincinnati General Hospital and returned after operation. It is evident that this type of cooperation is possible only in large cities, although many large cities themselves lack these facilities because the sanatoriums are usually run by the county, district or state, and the city hospitals take care of patients living only within the city limits.

Society is pledged to do all in its power to cure disease, and the citizens want their taxes reduced. Both of these projects are aided by the plan which has been outlined. It is deplorable that all cases of tuberculosis, whether charitable or under private care, do not have the benefit of surgical aid when indicated. Working plans to handle this problem are already in operation in European countries. The state board of health, interested lay organizations, the county authorities and the directors of sanatoriums should cooperate to provide surgical consultation and care for all indigent patients. We suggest that each county or sanatorium make arrangements with the nearest general hospital to have one or more members of its staff, trained in chest surgery, see these cases at the discretion of the director. Phrenicectomy could be performed at the sanatorium, but for larger procedures, the patient should be moved

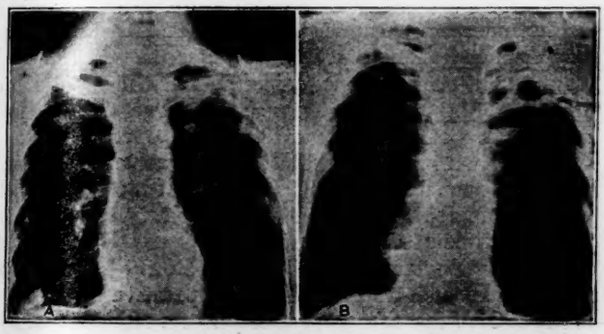

Fig. 1.—*A*, a large cavity in the left lung; moderate emphysema in the right lung. *B*, unsuccessful pneumothorax due to apical adhesions too extensive and too high to cut. Phrenicectomy was not indicated. Death occurred within forty-eight hours after thoracoplasty, due to poor cardiorespiratory function.

to the hospital temporarily on a prearranged per diem basis, which would not be materially greater than the cost for the same period at the sanatorium. The handling of the private patient is the concern of the general profession.

SELECTION OF PATIENTS FOR OPERATION

Why and when are surgical measures valuable in pulmonary tuberculosis? Natural cures of this disease have been effected for centuries, and under proper conditions the tendency of tuberculous lesions is to heal. Rest in bed to reduce the depth and number of respirations and build up the general resistance is still our greatest aid in any case. Rest in bed constitutes the accepted treatment in most cases, either because the lesions are minimal or because both lungs are involved, contraindicating collapse therapy. If only one lung is actively involved, some form of collapse therapy should be considered, but it cannot be used in all cases.

The simplest form of collapse therapy is artificial pneumothorax. Pleural adhesions may prevent the introduction of air; or this method may have to be abandoned when adhesions cannot be further stretched (fig. 1) or when new adhesions form. The adhesions attached to the chest wall hold open cavities which are reservoirs for the incubation of tubercle bacilli which jeopardize not only the uninvolved lung of the patient but the safety of every one in contact with him. In certain cases, adhesions may be divided by the Jacobæus or open method so that pneumothorax can be continued. If the adhesions are widespread and cannot be cut, or if a pure tuberculous empyema occurs, thoracoplasty must be considered.

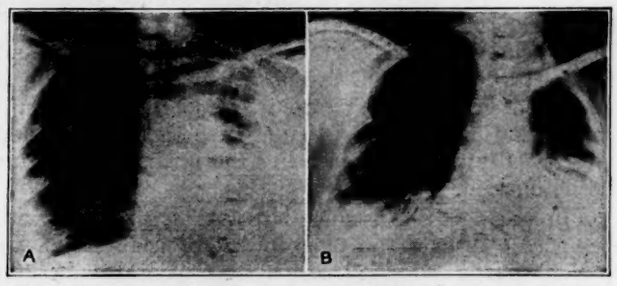

Fig. 2.—*A*, advanced tuberculosis of the left lung. A thickened pleura, cavitation and persistently positive sputum were noted. *B*, appearance following phrenicectomy and thoracoplasty. There was continuously negative sputum and the patient recovered.

Why do we do thoracoplasty? Primarily to do away with positive sputum. The field for thoracoplasty is limited to cases of involvement of one lung which show evidence of cicatrization, but in which the cavities are not closing and persistently positive sputum is found (figs. 2 and 3). Toxicity, as evidenced by fever and a rapid pulse rate, should be absent. The general condition of the patient must be favorable, although arrested lesions in the opposite lung, as well as secondary lesions, are compatible with collapse therapy.

If the case falls more or less into the foregoing pattern, the cardiorespiratory capacity should be studied. Long rest in bed has made the heart muscle weak, and toxemia has damaged it. Emphysema, due to overuse of the good lung, may be pronounced. The only way to determine whether these patients can stand a major operation is to observe the effort syndrome. Although contraindicated in the treatment in the average case, it is felt that before operation, one should get these patients out of bed daily, gradually increasing the time and amount of exercise, keeping a record of the rise in pulse and respiratory rate and observing the amount of dyspnea. The length of time required for

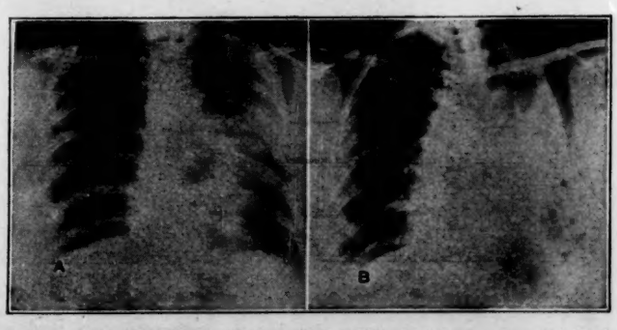

Fig. 3.—*A*, far advanced tuberculosis of the left lung. A persistently positive sputum was noted for three years. Phrenicectomy was insufficient, and pneumothorax impossible. There was a good cardiorespiratory capacity. *B*, appearance after thoracoplasty; sputum has since been negative continuously. Complete recovery occurred.

the return to normal should be noted. Cyanosis is a positive contraindication to surgery. It must be remembered that many of these patients are unable to walk. Thoracoplasty will affect them as would a 50 yard dash. Shock, local anesthesia poisoning, aspiration and other conditions are at times the cause of death during the

first forty-eight hours after thoracoplasty, but our experience and a survey of the literature lead us to believe that 75 per cent of these deaths are cardiorespiratory (fig. 1). The number of patients on whom we have made careful observations of the effort syndrome is still too small for tabulation, but we believe that this information is proving valuable, both as a method of selection in otherwise suitable cases and as a means of preparing the doubtful cases for operation. Other methods of investigating the heart should not be neglected. It is essential that one estimate the amount of compensatory emphysema by physical examination and by x-ray films (fig. 4). The experimental work of Churchill demonstrates the importance of this determination.

Phrenico-exeresis is done either in conjunction with thoracoplasty or as an independent procedure. If the patient has a onesided lesion and pleural adhesions which cannot be cut, and if he is too toxic for more radical procedures, phrenico-exeresis is done. Owing to the 15 to 25 per cent compression of the lung from raising the diaphragm and the lessened excursion of the lung, further surgery may not be needed if the sputum becomes negative (fig. 5). As a rule, some improvement occurs. If there is doubt as to the condition of the good lung, phrenico-exeresis serves as a test and a preparation for thoracoplasty, and can also be used after thoracoplasty when further collapse is needed to obtain negative sputum. The amount of upward displacement of the diaphragm following phrenicectomy will depend on its preoperative mobility. At times the diaphragm seems to be so completely fixed that cutting the phrenic nerve appears useless. In our experience, it is difficult to say how much improvement will occur in patients with an apparently fixed diaphragm, because there is possible movement of a part not detected by clinical or fluoroscopic examination. At any rate, the lack of tonicity of the muscle and the doing away with the inspiratory drag are of value in all cases, and cutting the phrenic nerve is worth trying even though the diaphragm is fixed.

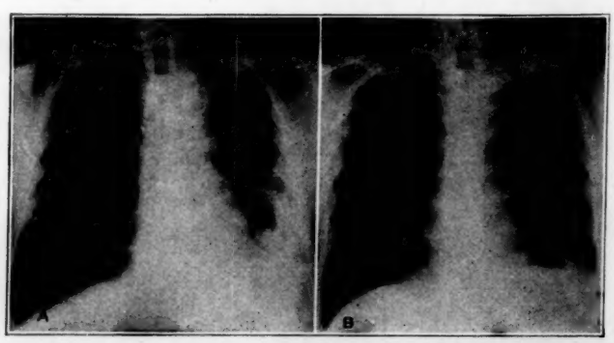

Fig. 4.—*A*, advanced tuberculosis of the left lung with cavitation. The high elevation of the diaphragm is the result of phrenicectomy. Thoracoplasty is indicated in the x-ray film, but the cardiorespiratory condition was unsatisfactory. *B*, tuberculosis of the left lung. A cavity and upward retraction in the upper lobe are noted. Moderate elevation of the diaphragm followed phrenicectomy, but the sputum was persistently positive. The film shows a healed lesion and excessive emphysema on the right, but the cardiorespiratory condition was favorable for thoracoplasty.

PREOPERATIVE PREPARATION

The greatest advance in the performance of successful operations since the contribution of Lord Lister is the better preparation of the patient with the narrow margin of safety to meet the ordeal of major surgery. Hedblom,[3] Alexander,[4] Archibald[5] and others have stressed preoperative preparation of the patient on whom thoracoplasty is to be done, and have made valuable contributions to the subject. The mortality has been lowered by these measures and by a simpler method of operative attack. Further study to determine the causes of certain deaths is still needed. In a broad sense, the selection of the patient is the most important part of the preoperative preparation.

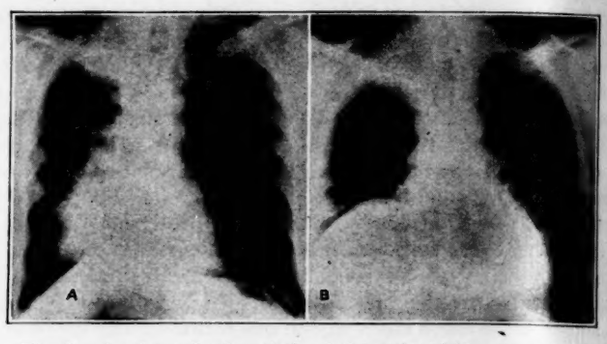

Fig. 5.—*A*, advanced tuberculosis of the entire right upper lobe, with persistent positive sputum. *B*, an unusually high elevation of the diaphragm as a result of phenicectomy. Recovery occurred without thoracoplasty; the sputum was continuously negative.

Phrenicectomy, graded exercise, and cardiorespiratory studies have already been discussed. Faulkner's[6] work on internal drainage has shown the advisability of attempting to empty posturally large cavities just before the patient is brought to the operating room. Although we have discarded postoperative transfusion of blood, occasional preoperative use of blood is needed if the hemoglobin is low and thoracoplasty is to be done with the hope of controlling hemorrhage. Usually time is not so important that we cannot slowly build up the patient. If such a measure as preoperative transfusion is necessary, the case is probably not a suitable one for surgery.

Our procedure is to give 3 grains (0.19 Gm.) of amytal by mouth two hours, and morphine one-half hour, before operation. We agree with Lundy[7] that the amytal not only acts as a sedative and helps "balance" the anesthesia, but apparently neutralizes some of the toxic effects of the procaine hydrochloride.

TECHNIC AND METHODS

This paper has nothing to add to the methods of performing phrenicectomy, cutting pleural adhesions or apicolysis, which have been ably described by Matson,[8] O'Brien,[9] Alexander and Hedblom. Although the Wilms-Sauerbruch[10] technic of thoracoplasty has been adopted by the majority, there is considerable variation in approach. We believe that many of these differences in method are due to a confusion between what is best for the patient and what is easiest for the surgeon. For example, it is far easier to remove the upper ribs at the first stage because the scapula is freely

3. Hedblom, C. A.: Phrenico-Exeresis and Extrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis, Southwestern Med. **13**: 53-64 (Feb.) 1929.
4. Alexander, J. S.: Surgery of Pulmonary Tuberculosis, Philadelphia, Lea & Febiger, 1925.
5. Archibald, E. W.: Dangers Involved in the Operation of Thoracoplasty for Pulmonary Tuberculosis, Surg., Gynec. & Obst. **50**: 146-153 (Jan.) 1930.
6. Faulkner, W. B., Jr.: Internal Drainage, Am. J. Surg. **12**: 27-31 (April) 1931.
7. Lundy, J. S.: Personal communication to the authors.
8. Matson, R. W.: Phrenicotomy, Nat. Tuberc. A. Tr. **24**: 170, 1928.
9. O'Brien, E. J.: Phrenic Nerve Operations in Pulmonary Tuberculosis, J. A. M. A. **95**: 650-652 (Aug. 30) 1930.
10. Sauerbruch, F., quoted by Alexander (footnote 4, chap. 9).

movable and there is no scar tissue to prevent exposure and infiltration anesthesia. Owing to expediency, one is even tempted to finish the operation in one stage.

This method is technically the easiest, but often disastrous. Harrington [11] retains many of the advantages of the one-stage procedure by making the complete incision for all stages at the first operation, limiting his operating time to thirty minutes and discontinuing any time the blood pressure drops below 100. Alexander, Hedblom and others remove the upper ribs first, feeling that by subsequent phrenico-exeresis they may obtain sufficient collapse for closure of apical cavities by the partial operation.

Our procedure (Dr. Asbury) is to remove portions of at least ten ribs subperiosteally as close to the transverse processes as possible in two stages, including the fifth to the eleventh at the first stage. Like Archibald, we have abandoned removal of the upper ribs at the first stage, because of the greater collapse and the added cardiorespiratory burden. We have never observed autotuberculinization due to collapse of large cavities, after either pneumothorax or thoracoplasty, nor do we fear a "fluttering mediastinum" because if there is enough pleurisy to prevent the use of pneumothorax, there are sufficient adhesions to cause at least a partial fixation of the mediastinum.

The second stage must not be unduly delayed, since new bone forms from the periosteum which was stripped from the removed sections of ribs and left behind to insure a rigid chest wall; but infection, such as acne or stitch abscesses, and wound drainage must be cleaned up before it is attempted.

Myocardial weakness has already been discussed. This factor, together with emphysema, outweighs all others in the operative risk, and must be kept in mind when using procaine-epinephrine anesthesia, whose chief danger is the great burden thrown on the heart. Before arriving at our present technic of infiltration, using a maximum of 100 cc. of 0.5 per cent procaine hydrochloride with 10 drops of epinephrine, we had one fatality and two severe reactions which were ascribed to the use of unnecessarily large amounts of solution, in one case as high as 200 cc. No trouble has been encountered since adopting the rule that the operation be either discontinued after 100 cc. is used, or finished with nitrous oxide anesthesia. In cases of severe myocardial damage, Meeker [12] contends that there is less danger from gas anesthesia than from procaine hydrochloride, although we believe that in the average case the advantages of local anesthesia should be retained because of the lessened danger of aspiration, asphyxia and pneumonia. There are also less bleeding and less need to hurry, and therefore less operative trauma, with local anesthesia. We agree with Carter [13] that speed is not the *summum bonum* in thoracoplasty. The beginners in this work often mangle a good deal of tissue to keep their operating time within ordinary limits. While all speed and skill possible should be utilized, gentle handling of tissue should never be forgotten. There are certain methods of exposure, mobilization of muscles and hemostasis which will do more to expedite the operation than any amount of rough, hurried surgery. In a general way, the Halsted type of surgery finds its best application in thoracoplasty.

At best, these patients suffer a certain amount of shock. The British Shock Commission, Turck [14] and others believe surgical shock to be due to the absorption of histamine and albuminoids from crushed tissue. In thoracoplasty there is a large operative area and much tissue is injured in obtaining exposure and removing periosteum from the ribs, even in the best performed operation. The extent of shock depends on the amount of blood lost, the cardiorespiratory condition before operation and the amount of trauma to tissue.

POSTOPERATIVE CARE

W. J. Mayo's [15] remark that the most important part of the after-care should be given while the patient is still on the table applies especially to thoracoplasty. Properly selected and prepared patients and well performed operations require a minimum of heroic postoperative effort; but since the disease must run a long course before thoracoplasty is justified, and since these cases present problems peculiar to themselves, certain measures have been found to have value in postoperative care. It must always be borne in mind that all these people are handicapped even with the best of preparation and selection. The majority of patients after thoracoplasty exhibit a pulse rate up to 120, a temperature up to 102 F. and a certain amount of cyanosis and dyspnea for from two to seven days after operation. In our early experience, we could not differentiate between average and grave postoperative manifestations, and were frightened unnecessarily into measures disastrous to two patients. Precautions in the ordinary case consist in instituting warm saline proctoclysis while the patient is on the operating table to compensate for loss of heat and fluids due to perspiration, always profuse during chest operations. A dressing pad is applied firmly and the arm is held closely to the side operated on to give stability to the chest wall and prevent painful movement. The patient is required to lie on the affected side as much as possible to cause further fixation and allow freer respiration in the good lung. A minimum of morphine is given as the cough reflex must not be lost. It is important to have the attendants steady the chest and have the patient cough at regular intervals to promote drainage and prevent bronchial plugging. Faulkner has shown that deaths are caused by the spilling over of the contents of cavities into the good lung, or sound parts of the affected lung, causing asphyxia or atelectasis. Atropine, which makes the secretions more viscous and increases the danger of a plugged bronchus, should be avoided. Frequent changes of position, except to the sound side, should be encouraged. If a large bronchus becomes blocked, internal drainage through the bronchoscope may be necessary. We look to the internist, long familiar with the patient, to detect these and other dangers, such as edema of the lung which usually responds to epinephrine.

Two years ago the use of acacia to combat the severe postoperative shock was begun. Even if this substitute were not available, transfusion of blood in these cases would be feared because of one fatality and several untoward reactions. Based only on this clinical evidence, it is believed that an unexplained change in the blood of these patients after operation makes trans-

11. Harrington, S. W.: Pulmonary Tuberculosis, S. Clin. North America **9**: 138-142, 1929.
12. Meeker, W. R.: Personal communication to the authors.
13. Carter, B. N.: Thoracoplasty as a Method of Treatment in Pulmonary Tuberculosis, Arch. Surg. **22**: 289-306 (Feb.) 1931.
14. Turck, F. B.: Mil. Surgeon **64**: 687-709 (May) 1929.
15. Mayo, W. J.: Personal communication to the authors.

fusion more dangerous than in other fields of surgery. On the other hand, acacia is a safe, reliable, intravenous solution which actually accomplishes more than transfusion (Good [16]). It can be used on a moment's notice, through a very small needle which eliminates cutting down on the vein. An important advantage is its trifling cost, a vital consideration in this group of patients, many of whom are indigent. It is our practice to use this solution in the majority of cases about one hour after operation, or sooner if the blood pressure drops below 100.

A special "infusion radiator" (fig. 6), designed by a sister at the Good Samaritan Hospital, allows the solution to be given at a constant temperature of 99 F. at the rate of about 25 cc. per minute. From 500 to 800 cc. is given, dependent on the response of the blood pressure. No reaction or ill effects have been encountered from the use of acacia at the Good Samaritan Hospital, and many others, including Adson and McIndoe,[17] Smith and Lowsley,[18] report favorable results. The World War experience of many men with acacia is probably the reason that it has not gained greater recognition. The delay in treating the badly wounded (Cabot [19]) together with the use of impure solutions probably accounted for the poor results.

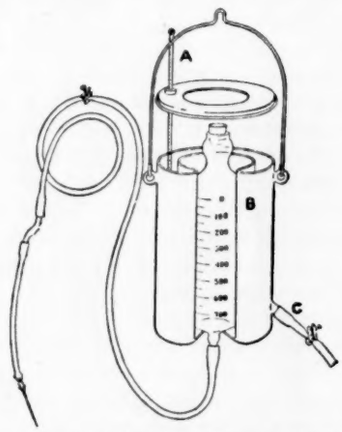

Fig. 6.—Infusion radiator, a simple apparatus to keep intravenous solutions at a constant temperature, allowing slow administration: *A*, thermometer; *B*, water jacket surrounding Kelly bottle, and *C*, outlet.

CRITERIA OF END-RESULTS

In our series of patients at the Good Samaritan Hospital who had thoracoplasty, 35 per cent had continuously negative sputum beginning two weeks after the operation. All of the remainder had consistently negative sputum after a period varying between two and nine months, with the exception of two patients who had persistently positive sputum. In a series of fifty cases from the Hamilton County Tuberculosis Sanatorium, 40 per cent showed negative sputum at once after operation, 40 per cent negative sputum after a period averaging seven months and seven persistently positive sputum. All patients who had negative sputum after operation recovered, while those who continued to have positive sputum either remained sick or died.

If the general condition of the patient is satisfactory and the sputum is still positive after six months, further collapse should be attempted, first by phrenicectomy and then, if necessary, by removal of anterolateral sections of the ribs. In certain cases secondary removal of posterior sections, though difficult on account of excess new bone formation and general cicatrization, may be necessary to obtain a further drop in the chest wall. In reattacking posteriorly, one must remember to divide the old periosteal bed if further drop of the chest wall is to be obtained. A stereoscopic x-ray study will determine which ribs should again be cut. In order to obtain collapse of the lung, the chest wall must drop, and this is prevented if the transverse processes are unusually long, or if the ribs are not sheared off at the vertebrae.

If positive sputum persists, the operation is regarded as a failure. Several patients were observed who had complete collapse of cavities, but the sputum remained positive. Although the x-ray films looked favorable, these patients gradually grew worse. On the other hand, there were several instances of incomplete collapse of cavities as shown by x-ray studies and yet the sputum became negative and the patients recovered.

SUMMARY

1. Thoracoplasty and phrenicectomy are established adjuncts to the treatment in selected cases of pulmonary tuberculosis.

2. Positive sputum is the chief indication for thoracoplasty in patients otherwise suitable. Continuation of positive sputum after thoracoplasty indicates need of further collapse. The sputum may continue positive after complete collapse or become negative with incomplete collapse. In any case, the only criterion of a successful thoracoplasty is a living patient with continuously negative sputum.

3. A plan is suggested to give the benefit of surgical procedures to both private and indigent patients with pulmonary tuberculosis, and the economic value of thoracoplasty is stressed.

4. A plea is made for further study of the effort syndrome in prospective thoracoplasty patients and of the cause of the occasional operative death within the first forty-eight hours. Cardiac damage and emphysema of the good lung should be estimated before operation.

5. The Wilms-Sauerbruch technic of paravertebral thoracoplasty in two stages is recommended, removing portions of ten ribs, including the first, as close to the transverse processes as possible, taking the lower ribs at the first stage.

6. The use of acacia instead of the transfusion of blood is recommended to combat shock because of its safety, reliability and cheapness.

ABSTRACT OF DISCUSSION

DR. ALTON OCHSNER, New Orleans: There are several points that I should like to stress which the authors have emphasized. One is the importance of determining the cardiorespiratory reserve. I have not used the same technic that they have used; viz., that of getting the patient out of bed and determining by his own exertion how much he can stand. I have attempted to determine the cardiorespiratory reserve by employing vital capacity studies and I feel that I can determine what type of patient will be able to stand such an operation. I also use as a test operation phrenic nerve operations. All my thoracoplasties are preceded by some type of phrenic nerve operation. In most of them I use evulsion. My experience has not been that of the authors' that blood transfusion is dangerous in these individuals. I use blood transfusions frequently, both preoperatively and postoperatively, and have been well satisfied with their use. I can see the advantages of the acacia solution, however, because acacia is always ready, it is not necessary to secure a suitable donor, and the ease with which it can be used certainly justifies it. I have felt that, in addition to the effect which collapse therapy would have on the tuberculous process in these individuals with the chronic fibroid phthisis with multiple cavities, thoracoplasty causes a collapse

16. Good, R. W., and Boyer, B. E.: Intravenous Use of Acacia Solution in Shock, J. Med. **12**: 630-636 (Feb.) 1932.

17. Adson, A. W., and McIndoe, A. H.: S. Clin. North America **9**: 841-845 (Aug.) 1929.

18. Lowsley, O. S.; Morrissey, J. H., and Ricci, J. V.: J. Urol. **6**: 381-398 (Nov.) 1921.

19. Cabot, Hugh: Tr. Staff Meet., Mayo Clin. **7**: 80 (Feb. 10) 1932.

of these cavities in which a secondary, nontuberculous infection exists. The importance of this, I believe, has not been sufficiently appreciated. I have had patients in whom the sputum has become negative, indicating that the tuberculous process is more or less quiescent, and yet these individuals have not improved in that they have had considerable expectoration which is filled with large numbers of pyogenic micro-organisms. Following the collapse of these cavities by thoracoplasty, the stasis is relieved and the secondary infection is combated. It seems to me that the importance of secondary infection in these greatly dilated cavities has not been sufficiently emphasized. I think it is commonly believed that a patient who is once tuberculous is always tuberculous. That is probably true, but it is the type of individual in whom there is a special tendency toward fibrosis in whom the tuberculous process is especially apt to heal by itself, but in whom the symptoms due to the secondary infection and not to the tuberculous process are apt to continue. The point that the authors have made concerning the use of the positive sputum as a criterion is of special import. More attention should be paid to it.

DR. E. J. O'BRIEN, Detroit: I believe that in most cases of pulmonary tuberculosis (especially with cavitation) the tendency is not to heal if the treatment consists only of rest in bed, and that at least 75 per cent of these patients should be subjected to some form of collapse therapy as early as possible in the course of the disease in order to facilitate closure, prevent cavity formation, and allow sufficient rest for their healing. I believe that the order of their simplicity is (1) phrenicectomy, (2) pneumothorax, and (3) thoracoplasty. With few exceptions it is only from those patients in whom some contraindication exists that collapse therapy in some form should be withheld. Neither bilateral nor minimal lesions alone constitute contraindications. I have a large series of cases under bilateral collapse therapy with excellent results, and it is my belief that the time to institute collapse is in minimal lesions if one is so fortunate as to see patients at this stage of their disease. As a matter of fact, bilateral lesions stand as a challenge to those who hold the view that collapse therapy should not be instituted early in the course of the disease. While, of course, it is always best that a prospective thoracoplasty patient should have unilateral cicatrized tuberculosis, many patients who could otherwise be saved would be lost if this rule was strictly adhered to. I do not believe that any patient with generalized tuberculosis should be subjected to surgery nor should any patient that is rapidly losing ground; but most other patients with cavitation and positive sputum, whose cavities cannot be closed by either phrenicectomy or pneumothorax, should be given a thoracoplasty or some other extrapleural operation to facilitate this closure and enhance the production of fibrous tissue which will cause cicatrization. I object to the statement, seen all too frequently in the literature, that the operative time has little or no bearing on the operative mortality. It is almost a byword, and certainly a catch phrase, that the speed of the operation should not be such as to prevent "gentle handling of tissues." Just what relationship speed has to gentle handling of tissues is difficult to understand. It is my opinion that a clean-cut, rapidly made incision with a rapid and careful removal of ribs causes far less trauma than the ponderous, slow method often employed. My operative time will average from seven to twenty minutes for completed thoracoplasty, and it is rarely indeed that I see the postoperative picture of shock, cyanosis, rapid pulse, and high elevation of temperature. A light gas-oxygen anesthesia is much better borne by the patient, and causes much less trauma to tissues and shock to the patient, than does infiltration with local anesthesia. I have not found it necessary in over two years to give any of the patients blood transfusions, and I believe firmly that if the technic of multiple-stage operations (rapidly performed) with judicious use of the middle stage operation is strictly adhered to, the use of blood or of acacia will be but rarely indicated.

DR. FRANK K. BOLAND, Atlanta, Ga.: I look on phrenicectomy as a forerunner of, a preliminary step in, the surgical treatment of pulmonary tuberculosis; I always expect to do a thoracoplasty later, but occasionally I get such excellent results from the phrenicectomy alone that I do not have to perform the further step. Phrenicectomy is not without danger. It does not do at all simply to cut the nerve; one must evulse it. If one simply cuts the nerve one does not get the accessory branches which join it in the chest. Often there is an accessory nerve of considerable size which runs into the phrenic nerve just below the subclavian vein. Occasionally this accessory nerve runs into the main trunk in front of the vein, whereas the phrenic nerve itself runs behind the vein, so that the subclavian vein is caught in the fork comprised by these two nerves. One case has been reported in which on evulsion of the nerve the subclavian vein was torn, and one can imagine what happened. At other times smaller veins get caught in the forks of accessory nerves running into the phrenic nerve. This operation must not be looked on as trivial, although it can be done in a few moments. These are exceptional cases which I mention, and usually one is able to evulse a long segment of the phrenic nerve and get good results.

DR. A. M. FORSTER, Colorado Springs, Colo.: As a medical man I cannot see the advisability of exercise before operation. All sorts of functional tests are tried, but if exercise is tried one never knows beforehand what the outcome of the operation may be. We medical men have got to depend on the surgeon's judgment as to whether that patient can stand the operation. I do not believe that the patient is prepared much better by walking exercise, provided he has definite evidence of toxicity, than by just following the surgeon's judgment or using some of the methods that have been mentioned for determining vital capacity. There is undoubtedly a compensatory emphysema of the contralateral lung, and in my opinion it is a favorable thing. It might be called an hypertrophy of the other lung. Those cases that show the compensatory emphysema or hypertrophy are the ones in which the patients are likely to do well following chest surgery. Anesthesia is of tremendous importance in thoracoplasty and I believe strongly that general anesthesia saves the patient from undue shock and that the local anesthesia, which permits what one might call a psychologic shock, is highly undesirable. It has not been mentioned so far that the use of the oxygen tent in addition to transfusion or the other methods following these operations is often of great importance. The question of secondary infection I think is also of great importance. Frequently there may be a virtually extinct tuberculosis, at least from the clinical point of view, but the patient is suffering from an extensive so-called secondary infection, which is markedly benefited by these operative procedures. I think that in these old cases the secondary infection is frequently the determining factor rather than tuberculosis.

DR. HORACE REED, Oklahoma City: I should like to stress in this discussion the cooperation between the surgeon and the phthisiologist. I have been doing this work for six or seven years and I find myself leaning more heavily all along on the phthisiologist. The treatment of tuberculosis is his problem. He encounters difficulties and he appeals to the surgeon to bring about certain conditions whereby he may make progress with the treatment of the patient. Surgery does not cure tuberculosis but it brings about conditions whereby the cure may be pursued with more success; hence it is largely the phthisiologist's problem, and it is his province to tell us what type of operation he wants us to do, whether he wants a complete operation, whether he wants it in the apex or below. Thoracoplasty is a formidable operation, and when once it has been performed one cannot recall the results; they are permanent. Hence, anything that may be done which carries with it less danger should be looked into before one resorts to thoracoplasty. The one operation that I like which the authors did not mention is the Jacobæus operation, or intrapleural pneumolysis. Before resorting to thoracoplasty, if the adhesions are not too extensive and if there is a considerable air space, one can easily look into the chest with a thoracoscope and often may find adhesions, which can be severed with a minimum of danger to the patient. It is easily performed, it is a minor operation, and it carries even less risk than phrenicectomy; it should be attempted, at least if there is any possibility of accomplishing something. The type of operation that I have been using or that I have been asked to do in the last few years has been a collapse of that portion of the lung in which the cavity exists. I do not necessarily start out to do a complete thoracoplasty or an operation of a certain type or size but am guided by the condition of the patient from moment to moment. I use local

anesthesia first, but never do I touch the patient until he is at least unconscious under gas-oxygen, and by that means avoid shock from the noise of the crunching of the ribs.

DR. KENNON DUNHAM, Cincinnati: I do not believe that whether one has speed or does not have speed is the great point, but trauma to the tissue certainly does harm. If one has a lot of oozing after the thoracoplasty, one may have infection and delay the second operation, whereas if one goes a little more slowly one may not have quite so much. If the patient is toxic, one should not do a thoracoplasty. It is wonderful how much section of the phrenic nerve will sometimes do, but one should not depend on it. One nearly always has to go on with the job. There are two kinds of emphysema. There is the emphysema that is compensatory, and then there is a degenerative emphysema with emphysematous blebs and lowering of the lung's vital capacity. All cases of tuberculosis that are arrested show emphysema to a certain degree, which is not all compensatory. It is a point that is not discussed much in the literature, but it is vital to this operation and it is vital to working out the case. Dr. Asbury and I apologize for not being able to tell more clearly what this effort syndrome should be and how to record it. We are sure that it is the only method that we have found on which we could depend.

TREATMENT OF ALIMENTARY TOXICOSIS

SAMUEL KARELITZ, M.D.
AND
BÉLA SCHICK, M.D.
NEW YORK

The clinical picture of alimentary toxicosis in infancy is characterized by intensive diarrhea and vomiting, resulting in dehydration, impaired circulation, acidosis and other symptoms.

The pathogenesis of the disease is still subject to discussion. Lately, different theories have again been evolved, namely, that of endogenous ascending bacterial infection and the theory of the formation and absorption of toxic substances formed either by the abnormal breakdown of proteins or by bacteria that are absorbed through the damaged wall of the intestinal tract. A few months before this paper was written, Dodd [1] and her collaborators have reported that guanidine was found in an increased amount in the serum of children suffering from alimentary toxicosis, and that treatment with calcium was successful.

Numerous methods of specific and other treatment are advocated. Without discussing all the different means of approach, we wish to report how we are treating infants suffering from alimentary toxicosis.

The problem of alimentary toxicosis can be divided into two parts. The first, the pathogenesis, we leave aside, as we want to concentrate on the second part, the therapy, which requires more urgent attention.

We base our procedure on the following simple, fundamental ideas:

1. Diarrhea and vomiting, once established, are no longer specific, but are symptoms of an aspecific hypersensitiveness of the gastro-intestinal tract. Everything, even water or tea, may irritate and may sustain or increase vomiting and diarrhea.

2. Dehydration is a secondary symptom due to loss of water mainly by vomiting, diarrhea and respiration. The diseased organism or, rather, the diseased cells are unable to retain either water or salts (plasma). There is a tendency to excrete fluid by way of the intestinal tract. This may occur to such an extent that the output of urine suffers until it is almost suppressed. All this leads to acidosis and blood concentration with accumulation of catabolic products. Forcing fluid by mouth or even by parenteral administration does not necessarily lead to a sufficient retention of fluid. Even such forced fluid may be excreted in this undesired direction, namely, through the intestinal tract. The diarrheic character of the stools may continue, and the number of stools may increase.

3. The toxic symptoms of the disease are at least aggravated by dehydration. Therefore, of paramount importance in our plan of therapy was: (*a*) more radical and longer than usual rest for the gastro-intestinal tract, and (*b*) treatment of dehydration with an intravenous supply of fluid. The method of venoclysis (Hendon) [2]—intravenous drip—was added by one of us (Dr. Karelitz). [3]

METHOD

Our routine procedure was as follows: After the admission of the patient to the hospital, from 100 to 250 cc. of a 5 per cent solution of dextrose in physiologic solution of sodium chloride or in Ringer's solution was given rapidly in the first fifteen to twenty minutes, after which the flow was reduced to from 15 to 40 cc. per hour (from 5 to 10 drops a minute), and this dosage was continued until the child was completely detoxified. The amount of fluid given daily was calculated according to the Pirquet system of nutrition, and was limited to 4 decigrams per centimeter square of the sitting height squared, which corresponded to about 2 ounces of fluid per pound.

Furthermore, as soon as possible after the venoclysis was started, a transfusion of from 75 to 150 cc. of citrated blood was given through the same cannula in about twenty minutes.

To improve the circulation, caffeine or epinephrine was administered in the same way. (From 1 to 2 cc. of epinephrine [1:1,000] was added to 250 cc. of dextrose solution, thus yielding from 0.13 to 0.33 cc. per hour.)

A twelve hour period of complete oral starvation was started. During this time only enough water was given to wet the mouth and the pharynx. In order to give the children as much rest as possible, after a short preliminary examination, only necessary examinations were made by the physicians. If it was important to take the temperature, it was taken in the axilla but not by rectum. Whenever possible special nurses took care of the children.

After the twelve hour period of starvation, from 10 to 20 cc. of water was offered every two hours. If the water was refused or if it was vomited, oral feeding was omitted, and an adequate increase in the flow into the veins was substituted. The administration of a milk mixture was started only when the detoxification seemed complete and *not before the lapse of thirty-six hours.* A simple 2:1 mixture of milk and water, boiled for three minutes, plus sugar in an amount of 5 per cent of the total volume was offered. From 5 to 10 cc. of this formula was given every two hours at the beginning (½ decinem according to the Pirquet system). The amount was increased daily for the next three or four days (an increase of from 5 to 10 cc. for each feeding, or a total daily increase of from 60 to 120 cc.). After that a similar addition was made every two or three days. The venoclysis was discontinued after all signs of toxicosis had disappeared.

If the symptoms of toxicosis recurred, the entire routine was repeated, except in cases of mild setbacks. The complete procedure is used only in decidedly toxic and severely toxic children. Acidosis and concentration

From the Pediatric Department, Mount Sinai Hospital.
Read before the Section on Pediatrics at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 11, 1932.

1. Dodd, Katherine; Minot, A. S., and Casparis, Horton: Guanidine as a Factor in Alimentary Intoxication in Infants, Am. J. Dis. Child. **43**: 1 (Jan.) 1932.

2. Hendon, G. A.: Venoclysis, J. A. M. A. **95**: 1125 (Oct. 18) 1930.

3. Karelitz, S.: Treatment of Toxicosis with the Aid of a Continuous Intravenous Drip of Dextrose Solution, Am. J. Dis. Child. **42**: 781 (Oct.) 1931.

of the blood were determined by chemical and other laboratory methods. Fifty-three children have been treated by this method. Fifteen were from 26 days to 3 months of age; eighteen, from 3 to 6 months, and twenty, from 6 to 12 months. About half of the children were Porto Ricans; the rest were white. Most of the children were underweight, and 10 were marantic, indicating a very poor nutritional history. About 50 per cent of them had complicating infections.

The intravenous route of fluid supply seems to us to be the most advantageous one for the continuous administration of fluid. The disturbances caused by fluid injected subcutaneously or intraperitoneally were thus avoided, and so we were able to give the child real rest. Furthermore, subcutaneously administered fluid is not well absorbed in cases in which there is a poor circulation. Hypertonic solutions can be given intravenously without the consideration of absorption, which causes concern when fluid is injected by other routes.

Since the fluid injected by venoclysis contained 5 per cent dextrose, complete oral starvation could be resorted to for a period of twelve hours, and the further omission of all food except water by the oral route could be continued for as long as was found necessary to stop all symptoms and restore the normal function of the intestinal tract. The dextrose served as food (from 80 to 160 calories daily), as a diuretic and as a stimulant to the heart and other muscles; it probably replaced some of the glycogen in the liver, thus aiding the function of the liver, and it may have helped the metabolism of fat. A 10 per cent solution of dextrose, desirable from the point of view that more calories would be supplied, proved to be too strong. Glycosuria resulted, and in some cases lasted for twenty-four hours or longer. During this period the urine excreted exceeded the amount of fluid consumed, thus increasing the dehydration.

By using physiologic solution of sodium chloride or Ringer's solution as a solvent for the dextrose, some of the lost electrolytes were replaced, and the solution was made hypertonic, thus aiding the diuresis. Although the solution was hypertonic, it was readily taken up by the tissue because of the slow rate of administration and, also, possibly because the fluid of the tissues may have been even more concentrated than the fluid injected. No difference was detected between the reaction to physiologic solution of sodium chloride or Ringer's solution. The children who had hyperchloremia on admission showed improvement and reduction of the blood chlorides, despite the administration of sodium chloride solution.

TECHNIC OF VENOCLYSIS

The child has to be fastened to the bed. The cubital vein or a vein in the leg is used, the arm or leg being fixed to a padded splint, which, in turn is tied to the bed. The vein is exposed, procaine hydrochloride being used for local anesthesia; the vein is tied twice with catgut ligatures after the cannula (Lindeman no. 18 or 19) is introduced, and the proximal loop of catgut is fixed over the needle. The attachment is the usual one used for intravenous therapy (gravity outfit with rectal drip bulb and a thumb screw clamp). In only about one third of the cases, and then after many hours of treatment, did the cannula become clogged so that it could not be cleared by probing and suction. Another vein had to be prepared if the venoclysis was still considered necessary. The period of venoclysis varied from nine to one hundred and fifty consecutive hours, usually being between from thirty-six to seventy-two hours, during which time from 350 to 800 cc. of fluid was administered daily.

As already mentioned, the milk formula offered after the period of starvation was a simple mixture of two thirds milk, one third water and 5 per cent added cane sugar. The fact that the amount of food is small is apparently more important than its quality. The long starvation may improve the tolerance for such simple prescriptions. It requires further study to learn whether other formulas, such as buttermilk, etc., might have avoided the occasional recurrence of diarrhea or abdominal distention which we encountered.

If doubt existed as to the advisability of starting the administration of food or of increasing the formula, it was always considered safer to delay the change. In many cases the formula was started before the venoclysis was stopped. This usually occurred when the child did not take sufficient fluid by mouth, even though he was no longer toxic.

CHEMICAL ANALYSIS OF THE BLOOD

The carbon dioxide-combining power of the blood served well in orienting us as to the child's condition. It was always regarded along with the clinical picture, since in a few of the most toxic children the carbon dioxide-combining power was relatively high. However, it was usually low on admission (from 12 to 30 per cent by volume and rarely up to 35 per cent), and it rose quickly with clinical improvement. Failure of the carbon dioxide-combining power to rise or to drop after improvement usually indicated that the treatment was inadequate.

The azotemia cleared up within the first twenty-four hours of treatment in all cases in which recovery occurred. Azotemia was present in about 25 per cent of the patients on admission.

The serum protein was determined in a few cases and was found to be elevated. More studies in this direction are necessary before we can take a definite stand as to the value of the serum protein in the diagnosis of the severity of toxicosis.

The blood sodium chloride was elevated above 0.7 per cent in several of the cases and seemed to follow the carbon dioxide-combining power in its return to normal. The sodium chloride dropped in these cases, despite the injection of physiologic solution of sodium chloride.

RESULTS OF TREATMENT

Our treatment has now been carried out for the past two and one-half years. Among fifty-three cases, the mortality was six, or 12 per cent. This must be compared with an average mortality of 64 per cent for the preceding ten years at the same hospital. Five additional patients treated in other institutions by the same routine recovered.

The children so treated showed an almost immediate general improvement after the venoclysis was started and an even more marked improvement after blood transfusion. The first evidences of improvement were a stronger pulse, better color, faster breathing, a clearer and more alert mental state, better turgor and increased kidney function. Acidosis disappeared and the chemical composition of the blood became normal. In every case vomiting ceased immediately. Abdominal distention occurred occasionally and was always regarded as a dangerous sign. The diarrhea was lessened in many cases, and it was completely stopped in ten children immediately after treatment was started. During 1931, the average duration of diarrhea after the starting of treatment was three days, with the maximum duration of nine days.

Our procedure seems to represent decided progress in the treatment of severe forms of alimentary toxicosis.

1095 Park Avenue—17 East Eighty-Fourth Street.

ABSTRACT OF DISCUSSION

DR. HORTON R. CASPARIS, Nashville, Tenn.: There is one thing the authors mentioned that is extremely important, and that is the administration of fluids, not only getting the fluids in but maintaining them. I have noticed that after I have given the patients a good deal of fluid and am waiting for something to happen, when they absorb the fluid they go right back into their old symptoms. I think that is extremely important. I too have used transfusions extensively. In some cases the results were not quite favorable.

DR. C. ULYSSES MOORE, Portland, Ore.: My first experience in the use of dextrose in diarrheal conditions began in January, 1919, thanks to the research laboratory of Dr. Hektoen in Chicago, who suggested, from his work on dogs, that it would be perfectly possible to use dextrose subcutaneously with babies. So for the last fifteen years I have been using this extensively; it is so much simpler than the intravenous route that anybody can give it either in the home or in the general hospital. I tried first the 10 per cent and then the 15 per cent solution of dextrose in physiologic solution of sodium chloride. A solution of 20 per cent or so gave such a low absorption rate that it was not practical for subcutaneous use, but a 10 per cent solution gave just as satisfactory results. As a routine, therefore, I use the blood and the dextrose subcutaneously, usually giving the new-born 150 cc.; I have given as much as from 5 to 7 per cent of the body weight in the new-born, 5 per cent being approximately the right amount. That is followed up with 10 per cent solution of dextrose in physiologic solution of sodium chloride, about 200 cc. being given perhaps as much as four times a day, twice a day, or as often as may be necessary. That has given satisfactory results and can be done quickly.

DR. HARRY LOWENBURG, Philadelphia: I have used Dr. Schick's method and apparatus in the Mount Sinai Hospital, Philadelphia. Fortunately, cases of intestinal toxicosis are becoming rare, because of better methods of artificial feeding, the result of long continued prophylactic propaganda. In these cases it is essential if possible to remove the cause as, for instance, when a parenteral infection exists, as middle ear disease or pyelitis or adenitis or something similar. All such lower the tolerance for food. Not all these cases therefore are essentially and primarily food injuries. Not only is this method of introducing fluids of value in intestinal toxicosis but it has been employed to great advantage in septic cases as, for instance, meningitis when forced spinal drainage was employed. It has been used especially in streptococcic meningitis and acute febrile pyuria (pyelitis) when it was desired to administer fluid continuously. The technic has not always been perfect. On several occasions there has been trouble. The fluid sometimes stops flowing. Edema of the arm or leg has developed wherever, at the time, the fluid happened to be administered. Have the authors had an experience of this sort and if so how do they account for it and how do they handle it? The temperature of the fluid, provided it is not too low, is not as important as formerly it was thought to be. The rate of flow of the fluid into the circulation is of greater import than maintaining a constant temperature of the fluid in the receptacle. If the fluid cools the blood, likewise the blood will warm the fluid. I have found that if there is proper control as to the rate of introduction, from about ten to fifteen drops a minute, it is not necessary to maintain the fluid in the receptacle at a definite temperature.

DR. F. J. SCHATZ, St. Cloud, Minn.: There is a question I should like to ask the authors. What would they do if the patients were treated in the country, and what methods would be used to treat these patients when it is necessary to use medication by mouth? I have had some experience in treating diarrheas. I have checked the vomiting by using hot water, plain, or with alkalis; also, as was suggested by one of our members, by the use of raw apple juice and pulp. It is surprising what results one gets in these cases with that type of treatment.

DR. BÉLA SCHICK, New York: We use drugs for purposes of stimulation only (epinephrine, digifoline-Ciba). If the child is extremely restless we give tincture of opium. That is the only medication used. The injection of fluid subcutaneously, of course, supplies fluid, but it means a great disturbance to the child. Furthermore, if the circulation is poor the absorption may be too slow and these are just the cases in which the fluid is needed most urgently. Many hours after injection the fluid can still be seen around the place of injection. If the intravenous administration of fluid is impossible the subcutaneous method has to be used, but we give preference to the intravenous method. We are against rectal administration of fluid. This procedure irritates the intestinal tract too much and increases the peristalsis. As already mentioned, we do not even take the temperature by rectum. The use of the intravenous drip method in other diseases is of great value. We apply it not only in alimentary toxicosis but in diabetic coma, meningitis, tetany and other conditions in which we have difficulty in supplying fluid or nourishment in other ways. An edema-like swelling occurs if the needle is not in the right place. At the beginning we were much concerned about the temperature of the dextrose solution. The container is kept warm by putting rubber bottles filled with warm water around it. More is not necessary. The intravenous drip method may be difficult to carry out in the country, and in that case of course the fluid has to be given subcutaneously. In the city the method can be used in private practice if a competent nurse supervises the procedure and the physician can visit the child from time to time. The main thing in the whole treatment of alimentary toxicosis is to give rest to the intestinal tract. We give no milk until from thirty-six to seventy-two hours after the treatment has been begun. That is about enough time for the intestinal tract to resume its normal function.

PROLAPSE OF THE RECTUM

ITS RECLASSIFICATION AND SURGICAL TREATMENT

EDWARD G. MARTIN, M.D.

Proctologist, Department Head, Detroit Receiving Hospital; Associate Proctologist, Harper Hospital; Consulting Proctologist in Charge, Grace Hospital

DETROIT

Prolapse of the rectum is an inclusive term indicating an abnormal descent, in varying degrees, of one or all layers composing the pelvic colon and rectum.

In this discussion, I wish it understood that it is not my intention to be hypercritical of others, nor do I claim any particular originality. I have reclassified prolapse of the rectum, calling that condition which has always been classified as third degree, first degree; the condition of complete prolapse commonly referred to as first degree, I have reclassified as third degree or complete colorectal and anal prolapse. The principle of the operative technic that I shall describe was outlined early by Lenormant;[1] he claimed priority for Jeannel, who by a colostomy in 1899 held the ptosed colon in position for the cure of rectal prolapse. The technic that I employ is a modification of that of Sir Charles Ball,[2] who reported five cases in 1907. I believe his technic to have been almost submerged, owing to a misleading classification with a resulting misconception of the fundamental etiology. Many ingenious and complicated methods for fixing the rectum only in situ have followed, while conditions above the rectum, which must be considered fundamental in the development of prolapse, have unfortunately been disregarded.

CLASSIFICATION AND DEFINITION

The following classification was determined by the extent or degree of the prolapse and the sequence of its development:

Read before the Section on Gastro-Enterology and Proctology at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 11, 1932.

1. Lenormant, C.: Rev. de chir. **35**: 191 (Feb.), 443 (March) 1907.
2. Ball, Charles B.: The Rectum and Anus, London, Cassell & Co., Ltd., 1887.

I. *First degree*: internal or "concealed" prolapse; invagination of (sigmoid) pelvic colon into rectum; ptoses of pelvic colon.

II. *Second degree*: rectum is protruded through anus. (A perianal sulcus is present; the anus is not involved.)

III. *Third degree*: prolapsed colon, rectum and anus (no perianal sulcus present). Complete anorectal prolapse. Procidentia.

IV. Partial or mucous prolapse. (Commonly seen in childhood.)

ETIOLOGIC PATHOLOGY

I shall quote from the late James Tuttle,[3] whose pioneer work in America forms most of the background of subsequent American treatises on the subject of proctology. It should be borne in mind that he used the earlier or reversed classification.

It will be remembered that the latter (rectum) is held in position by several different classes of supports. The lower portion is maintained in position by the levator ani and external sphincter muscles, the perineal fascia and fibrous attachments to the coccyx, and the prostatic or vaginal walls; the middle portion is supported by the loose fibrous tissues which pass off from the sacrum along the course of the lateral sacral arteries and line the upper surface of the levator ani, thus connecting the organ with the osseous frame of the pelvis. The superior portion is held in position by the peritoneal folds which connect it with the pelvic walls upon the sides, the bladder or uterus in front, and with the sacrum behind, *where the mesorectum and mesosigmoid comprise the chief support of the intestine* (my italics). In order that procidentia may occur there must be a weakening or destruction of these supports as well as some force capable of dislodging the organ from its position. The passive supports, composed of fibrous and elastic tissues, lose theirs through atrophy, injury, or paralysis. In procidentia of the first (third[4]) and second (second[4]) degrees, the pathologic changes consist in alterations in the muscular apparatus and fibrous attachments of the lower end of the rectum to the surrounding parts; in that of the third (first[4]) degree the alterations take place in peritoneal, vascular, and connective-tissue supports. The latter condition is always of a gradual and slow development; the former (second and third) may come on suddenly from accident or injury, *or it may devolop from the extension of a procidentia of the third (first[4]) degree* (my italics).

Tuttle[3] said:

Speaking from a mechanical point of view, this degree (third) is only the first step of the second degree of procidentia, only it is higher up and in the majority of cases never proceeds to actual protrusion through the anus.

Thus Tuttle early recognized colorectal invagination as the first degree in a prolapse sequence. Mechanically, a second or third degree prolapse cannot occur unless the mesocolon has abnormal mobility. The pelvic colon cannot be satisfactorily entered with the sigmoidoscope if it has a short mesosigmoid, yet when supported by a longer mesion examination is usually satisfactory. In the first group prolapse cannot develop, while in the second group it could develop if the fixed areas[5] were loosened and the mesion were unusually long. When for any reason this condition develops or already exists, one may readily understand the tendency for the loose pelvic colon to descend and occasionally to protrude into the fixed rectum. It is thus that a first degree prolapse begins, and may exist for years before the rectal supports, or *second line of defense*, become loosened and the second degree of prolapse develops. In the *second* degree, with the rectum repeatedly protruding through the anus, it should require but little imagination or anatomic knowledge to understand that the anus could and would finally evert with a completely developed colorectal and anal prolapse, or a third degree—not a first degree as it has previously been classified. The predisposing or primary cause of prolapse, then, is a congenitally long mesocolon with abnormal mobility of the fixed areas. The precipitating causes may be one or more of the innumerable assigned causes spread through the pages of presumed authoritative treatises, such as stricture, neoplasm, colitis, proctitis, hemorrhoids, impaired sphincter, wasting diseases, polyps, postpartum conditions and the like. Surely you have seen many people with such conditions, yet it is but occasionally that you have seen a prolapsed rectum; I do not refer to the mucous prolapse of children and the aged or to an exaggerated physiologic eversion of the mucous membrane of the rectum. May I venture the guess that

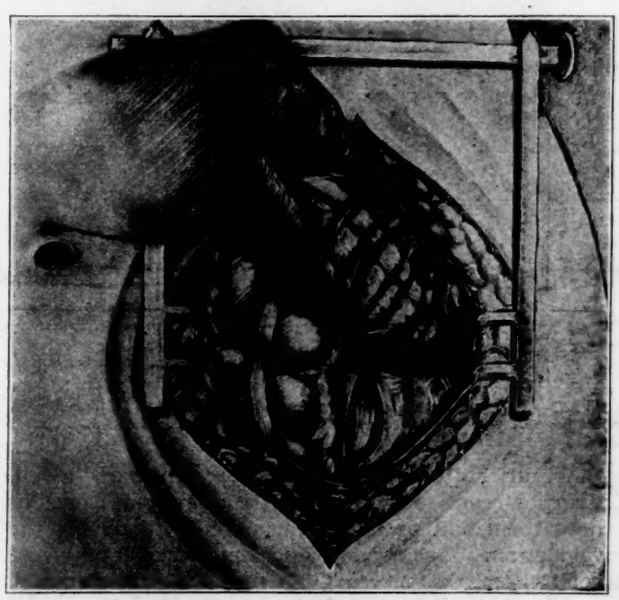

Fig. 1.—Pelvic colon pulled up taut (prolapse reduced and in situ). Diagrammatic incision through the retroperitoneum, exposing the tendinous portion of the psoas minor.

many of you never have seen a prolapsed rectum, and the suggestion that if prolapse was caused by these innumerable conditions, it would be more commonly observed by the average physician? When man walked on all-fours, his colon was suspended as nature intended it to be; he was not then troubled with prolapse. But with the functioning colon suspended in a perpendicular position, is it surprising that the fixed areas stretch out in the predisposed person, permitting the development of a rectal prolapse?

DIAGNOSIS

In the first degree of prolapse if colorectal invagination occurs, intussusception is found in the ampulla of the rectum. If it were to prolapse through the anus, a second degree diagnosis would be a pardonable error, but differentiation would be made by finding a deep sulcus extending through the anus into the lumen of the rectum. The condition can best be studied and diagnosed with the proctoscope. In the knee-shoulder position, with the back sagging, the internal "concealed" prolapse should demonstrate itself through the proctoscope if the patient strains, receding during the

3. Tuttle, James P.: A Treatise on Diseases of the Anus, Rectum and Pelvic Colon, New York, D. Appleton and Company, 1902.
4. My classification.
5. Junction of the rectum and the sigmoid (pelvic colon); junction of the iliac colon with the sigmoid.

intervals between the straining efforts. The protrusion should be seen with an orifice at the apex, and can usually be felt digitally. Low backache, a symptom of internal hemorrhoids, usually accompanies first degree prolapse with an associated pelvic and perineal pain. A history of "colon constipation," which was described

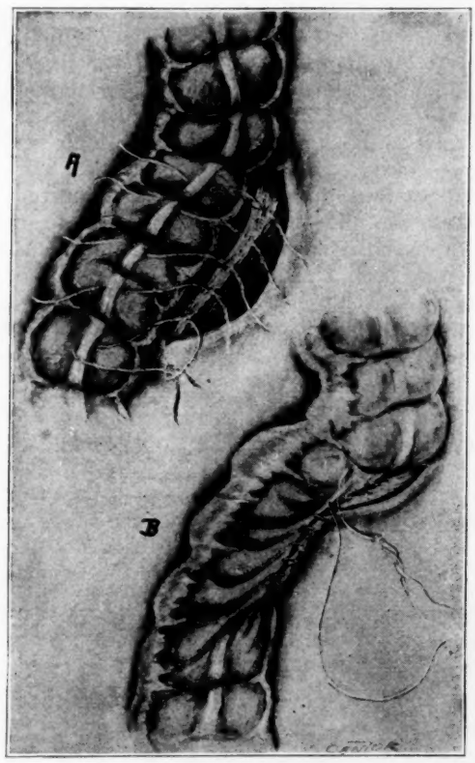

Fig. 2.—*A*, chromicized gut sutures placed for fixation. *B*, lateral peritoneal edge of wound sutured to colon, covering the exposed fixation area.

by Arthur Hurst [6] as "dyschezia," is usually given. Cathartics seem to exaggerate the symptoms; enemas relieve them and produce evacuation by reducing the invagination. Mucus and blood, flatulence, cramps and other associated symptoms can reasonably be expected in such a condition of long standing. Indeed, the diagnosis of first degree prolapse requires understanding and an experienced examination. Gastroenterologists should find them frequently.

Further diagnostic discussion of second and third degree prolapse is superfluous.

MUCOUS OR PARTIAL PROLAPSE IN CHILDREN

The etiology of prolapse in children may be considered in principle only, the same as in adults; the prognosis is good for recovery without operation. Compared with the adult, a child's colon is disproportionately long, but as he grows taller and the sacral curve develops, the slack is usually taken up, which accounts for actually "outgrowing" the prolapse. It is the consensus that the rectal muscle is not commonly involved. Polyps and constipation seem to be the common etiologic factors. Fixation in situ by linear cautery is simple, rational and satisfactory, requiring but a few days for recovery.

OPERATIVE TREATMENT

If the pelvic colon is pulled up until the rectum is taut and is fixed there, the prolapse is cured. It is perfectly reasonable to believe that occasionally some supplemental repair may be desirable. Such local measures may include plastic anal repair, rectopexy, posterior colporrhaphy, shortening the round ligaments (never ventral fixation of either the uterus or the colon), vaginal excision of Douglas' pouch when an enterocele is present, closing the culdesac, perineal repair, etc. These supplemental operations should not be considered as strictly necessary in colon fixation.

COLON FIXATION; COLOPEXY

A left rectus incision extending from the pubes to the umbilicus is made with a high Trendelenburg position (figs. 1, 2 and 3). Assisted by a self-retaining retractor, the small bowel is packed off, exposing the colon, which is pulled up taut and quickly tried in position to determine the exact and relative location of the proposed fixation. The general location of the left ureter, mesial to the psoas major, should be borne in mind. The psoas minor,[7] which is a tensor of the iliacus fascia and has some mobility, makes an excellent location for the fixation, the tendinous portion being used, as illustrated (fig. 2). The iliacus fascia is more commonly used with no particular advantage other than it is always present and accessible. A 3 or 4 inch incision is made through the retroperitoneum and areolar tissue over the site chosen for fixation, the tendon or fascia being exposed. A number 1

Fig. 3.—Roentgenogram of rectum and colon made two years following technic described for rectal prolapse. Discloses redundant pelvic colon complicating the colopexy. Patient has had absolutely no adverse symptoms, such as constipation and colic and no prolapse.

chromicized gut suture is first placed through the longitudinal band of the colon, a little below a point where it is then to be inserted into the psoas minor or the fascia of the iliacus, and left untied. Four or five sutures are then placed about one-half inch

6. Hurst, Arthur F.: Constipation and Allied Intestinal Disorders, ed. 2, London, H. Frowde, 1919.

7. The psoas minor is a long slender muscle, partly tendinous and often absent, lying in front of the large psoas major.

apart in relative positions. When the first or lower suture is tied it pulls the colon up and in approximation to the exposed fascia; the other sutures are then tied successively. The lateral or outer edge of the peritoneum is sutured lightly over this fixation area to the colon, a fine needle with fine plain catgut being used, thereby covering all raw areas. It has been found unnecessary to suture the mesial edge of the peritoneum to the intestine, since it is in apposition to it after the fixation sutures are tied. It has also been found unnecessary to denude the colon at the area to be fixed. The usual abdominal closure completes the operation, and routine postoperative care is given with the patient in bed for at least ten days. A daily saline enema with evacuation in the recumbent posture is suggested for thirty days.

SUMMARY

1. A logical nonconfusing classification is arranged based on the etiology and sequential development of the prolapse.

2. A simple method of correcting the causative factors is described, having the advantages of simplicity, speed, safety and permanence.

1447 David Whitney Building.

ABSTRACT OF DISCUSSION

DR. JEROME M. LYNCH, New York: I think Dr. Martin's reclassification of prolapse is excellent. The operation described by him may give good results in his hands, but in mine it hasn't been very successful. There are certain basic principles which must be understood in order to work out properly the suitable operation for this defect. Todd has pointed out that the levator ani muscle is not important as a rectal support. This is evident to any one familiar with excision of the rectum. If the levator muscles are severed, the intestine cannot be delivered through the wound without cutting the lateral ligaments. But when the lateral ligaments are severed, the rectum and a considerable length of pelvic colon can be withdrawn through the perineal wound. Granted that the lateral ligaments are the chief support of the rectum and that these ligaments are composed of connective tissue, the quality of this tissue is fundamentally important. The problem of curing prolapse involves the replacing of all structures in their normal position, overcoming structural weakness, diminishing slack, and so arranging the peritoneal pelvic diaphragm that there will be an equal distribution of pressure. Any operation, to be successful, must not only be anatomically correct but also take into consideration the best means of obviating recurrence. I believe the procedure that I have devised and successfully carried out is based on sound anatomic and physiologic principles.

DR. MAURICE LESCALE, New Orleans: I think that Dr. Martin's classification should be adopted, because it simplifies the matter and puts it on an absolutely correct basis. Under the older classification one might get the mistaken idea that the three different classes or stages were separate entities, whereas Dr. Martin's classification makes it plain that the three classes of prolapse are only different stages of development of one and the same condition. This point is important because it should be of much assistance in the matter of diagnosis. Cases of Martin's first degree prolapse are going undiagnosed because many men think that it is a rare condition about which they know little or nothing. However, this new classification should impress on these people who can't help but recognize second and third degree prolapse that they are dealing with the fully developed condition, and this should cause them to be more on the alert to recognize the first degree cases as they present themselves, because the first degree cases are much more difficult to diagnose. The head of a large general clinic who has operated in several cases of complete prolapse said he had never seen a case of colorectal intussusception, first degree prolapse, and I think it is the haziness of the older classification and nomenclature that can account for this. The week following the annual session in 1931, Dr. Miller and I did a colon fixation for first degree prolapse. The patient is a traffic policeman stationed outside the convention auditorium. Yesterday he reported that he is symptom free, which makes practically one year's duration.

DR. LOUIS J. HIRSCHMAN, Detroit: In following out the real etiology of colorectal prolapse, if one considers the normal demarcation between rectal and pelvic colon as opposite the third sacral vertebra, there are many cases which would fall into Dr. Martin's classification which are really more colonic than rectal. However, the rectum will follow later in the progress of the disease. Of course, the pelvic colon normally intussuscepts during defecation to a certain degree, and people who have considerable difficulty with defecation are likely to put an undue strain on this colon. Normal intussusception is increased not only by obstructive difficulty but also, of course, by a congenitally long mesocolon. In addition to the prolapse, one may also have (as was mentioned) an eversion of the anal canal; in other words, one may get two distinct conditions present at the same time, and Dr. Martin recognizes this by the fact that he rightly performs an intra-abdominal operation for the relief of the main condition, and subsequently an operation for the relief of the secondary condition. It is quite logical, as Dr. Martin has stated, the grave condition, namely, the intussusception of colon into the rectum, should be treated by intra-abdominal means. As far as personal opinion is concerned, I have never believed that when it is possible physiology should ever be deviated from in treatment or that an organ which should be normally mobile should ever be abnormally fixed. If that sigmoid or pelvic colon can be restored to its normal location without the movable muscular wall being fixed in any way, it would be better. Before the meeting of the British subsection on proctology in London, in 1924, I presented a paper showing a technic for this particular type of suspension or fixation which did not require the placing of any stitches through the muscular wall. Instead of attaching the peritoneal wall to a muscle or peritoneum, or anything else, all I did was to draw out of the pelvis the redundant or intussuscepted colon (rectum and colon) and obliterate the fossa between the opposing folds of mesentery. I put in stitches that paralleled the blood vessels. By sewing mesentery to mesentery, what was formerly a sulcus becomes a double thickness mesentery, drawing the rectum out of the intussuscepted condition, and, without doing more than doubling the normal support, decreasing the length of the mesentery and thickening it by disposing of the sulcus. So, after the stitches are placed, the sigmoid is drawn out by merely sewing mesentery to mesentery. I call the operation mesomesosigmoidopexy. It does not involve stitching the bowel to anything and it does not interfere with peristalsis. I have been using the operation for more than fifteen years and it has been highly effective. If, in addition, there has been an eversion of the anal mucous membrane, that is taken care of also. The colon is not fixed to anything. The mesosigmoid, which is the normal support, is strengthened and doubled, and it draws the prolapse out of the pelvis, and the sigmoid functions normally.

DR. C. C. MECHLING, Pittsburgh: I agree with Dr. Lynch that the rôle of connective tissue in the support of the rectum has not been fully appreciated. In dissecting the rectum, one will be impressed by the two connective tissues which I believe to be the whole support; namely, the lateral ligaments and the retrorectal connective tissue. Lockhart-Mummery called particular attention to that in his effort to increase or produce a hyperplasia of the retrorectal connective tissue. The shortening of the ligaments of the rectum would be the ideal method of fixation of the intestine; theoretically it would be a good way, but practically it is a difficult one of accomplishment. This treatment of Dr. Martin's to me is logical and sound. I am glad to hear him reclassify the subject of prolapse of the rectum. The treatment nowadays, of course, rests on a substantial anatomic basis. It varies greatly from the early concept of the surgical treatment of prolapse of the rectum, when it consisted

of making a stenosis of the anal orifice. Some of us have seen cases in which this treatment was applied and usually not very effectively. I merely mention this to give me a text to report a case seen less than a month ago in Pittsburgh, where an Armenian woman, aged 26, was referred to the proctologic dispensary on account of an intestinal upset. She had been through the medical clinic and was referred to the proctologic clinic because she complained of constipation. She was seen by Dr. Zimmermann, who found a tumor above the pubis, which was movable abdominally. A digital rectal examination was made and a large impaction discovered. In a detailed examination he found a rough metallic substance buried underneath the skin and referred the patient for roentgen examination. A buried wire suture was discovered. When the patient was 4 years of age she had a prolapse of the rectum. She lived in Constantinople. An "operation" was performed. She has had eight children. That helps to remove the concept that probably foreign bodies could not be inserted in the peritoneal tissue with safety. The wire apparently allowed for a maximal contraction of the anus but did not allow for a maximal dilatation of the anus, which was probably the cause of the impaction. The patient refused to have any operation and after three or four visits to the clinic she was relieved of the impaction, but the wire still remains.

DR. LOUIS A. BUIE, Rochester, Minn.: As far as the operative treatment of prolapse of the rectum is concerned, I think that is, as it has always been, a matter of personal choice. One man gets a good result with one method and another with another method and, after all, I am not quite sure that anybody is getting entirely satisfactory results with any of those methods, and it is a question of the individual type of condition one is dealing with which demands more or less of a departure from the formula in each particular case. This classification of prolapse is highly acceptable, though I fear we shall probably slump back into the old classification as we have always done—that is, almost always. I think that it might be a good idea if we would exert ourselves a little more than usual in an attempt to try to establish this simple and satisfactory classification.

DR. EDWARD G. MARTIN, Detroit: I realize that any operative procedure which may be suggested is subject to proof by trial and properly debatable. The operation that I have advocated is not new in principle, but modified and simplified. I have had the opportunity of observing several of the cases over a sufficiently long period to know that the results are satisfactory if the technic that I have outlined is followed and competently performed. There are two "fixed areas" that I referred to in my paper and locate; their location is at the junction of the rectum and the pelvic colon, and at the junction of the pelvic colon and the iliac colon; this is referred to in my paper by reference and described in Gray's Anatomy. The mesentery of the pelvic colon must be congenitally long, and those two fixed areas must be abnormally loose before a rectal prolapse is possible. This condition does not cause but permits of the development of prolapse. In my opinion, the results of any operation on the mesentery as described by Dr. Hirschman are subject to a similar criticism of results as when suspension is done to the peritoneum—the abdominal peritoneum in particular; it may stretch out and permit a recurrence. If the colon is fastened to the fascia or the psoas minor muscle, there is no tissue involved in the procedure which can stretch out. In a recent case of prolapse of the rectum in which I operated according to the technic described, the history was given of a complete prolapse and operation fifteen years earlier; this condition was satisfactory for seven years, when the patient had a recurrence, and he had been so troubled since that recurrence. At operation, I found that a suspension had been made to the abdominal wall and that a broad and long peritoneal ligament, if it may be so called, was present and of sufficient length to permit of the recurrence. I dissected this out before doing the fixation. May I repeat that the psoas minor muscle is occasionally absent, which accounts for my mentioning that the fixation to the iliacus fascia has proved highly satisfactory and is accomplished following the same described technic. When one pulls the colon up taut and fastens it there, the prolapse is cured.

DRUG ADDICTION AND MEASURES FOR ITS PREVENTION IN THE UNITED STATES

WALTER L. TREADWAY, M.D.
Assistant Surgeon General, United States Public Health Service, Division of Mental Hygiene
WASHINGTON, D. C.

The better orientation of public policies adopted for the solution of the so-called narcotic drug problem involves a knowledge of when, where and under what circumstances addiction occurs.

The practice of indulging in habit-forming drugs, like the problem of chronic alcoholism and mental disorders, is not limited to any one class of society; the high, the low, the rich, the poor, the weak and the strong are all represented. It has been estimated that 80 per cent of the present addiction occurs in the land of "Hobohemia," or in the underworld. This estimate is probably based on the fact that drug addicts of the underworld are more apt to come under observation, whereas those of the so-called middle and upper classes are usually inaccessible for observation, and the incidence of addiction is unknown.

It is interesting to observe that repeated prison sentences are imposed more often on drug addicts than on other types of federal prisoners, those with three or more prison sentences occurring twice as often among addicts. This contrast is decidedly greater for the country as a whole, however. This situation of repeated prison sentences challenges the usefulness of handling drug addiction through prison sentence alone.

The desirability of modifying pertinent public policies is suggested by the variation in the time elapsing between the ages when addiction becomes established and the age when such individuals are sentenced to prison for the first time. Approximately half of the narcotic drug addicts sentenced to prison for the first time have been addicted to the use of habit-forming drugs for eleven or more years; about 25 per cent have been addicted for twenty or more years, and 25 per cent for six years or less. In general, those addicted earlier in life have a greater time elapsing between the date when addiction becomes established and the date of first prison sentence. These factors suggest that, so far as remediable public policies are concerned, drug addiction has been regarded as a penal and correctional problem, like that of the insane of an earlier day, without cognizance being taken of its medicosociological and economic significance.

It is desirable to point out that no one occupation possesses a monopoly of the practice of using habit-forming drugs, and no nationality, race, color or social class is exempt, for drug addicts are found in most unexpected places.

Contrary to widespread belief, some drug addicts are engaged in lawful and gainful occupations. These comprise users accustomed to small doses that are kept constant for years. Those tending to increase their dosage are more often found among the irregularly employed, the unsteady, and the floating, loafing, "racketeer" population of a community. The migratory habits and unfixed residence of these people are proverbial.

Males predominate among drug addicts coming within the field of observation in the proportion of about four

Clinical lecture, read at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 9, 1932.

white males to one white female. The proportion of women is somewhat higher among the Negro group. A very large number of women drug addicts who come within the scope of observation are prostitutes.

The distribution of drug addicts observed among the white and the Negro populations shows higher quotas among the Negro group, especially for Negro females, when compared with white females. Studies of the nativity of drug addicts indicate that there is no significant difference in this respect from that observed in the general population. The foreign born, the native born of native parentage, and the native born of foreign or mixed parentage occur in about the same proportion in the addict and in the general population groups.

Separation and divorce are more common among drug addicts than in the general population, divorce occurring about five times as often. Widows and widowers are also found more often among addicts. Marriage among female drug addicts occurs in about the same frequency as marriage among females of the general population. Marriage of male addicts, however, occurs with less frequency than marriage of males in the general population, there being a disproportionate number of single men without homes or without family ties among them.

The educational status of persons addicted to the use of drugs is somewhat higher than that of the general population; illiteracy, however, occurs somewhat more often among those addicted. About the same proportion of drug addicts finish the fifth and the eighth grade in schools, enter and finish high school, or go to college, as is observed in the general population. There is, however, a relatively higher proportion of the professional classes in the addict group.

Drug addiction is most prevalent in the larger urban centers. It is also observed in smaller cities and towns, and in rural communities. Studies of the commitments of drug addicts to prisons, jails and reformatories throughout the country show variability in geographic origin. Investigations of prison commitments for violation of the narcotic laws indicate that drug addiction is very widespread and that its geographic distribution corresponds generally with the density and geographic distribution of the general population of the country. This is true for those who are registered to deal in and handle narcotic drugs and for those who are unregistered.

Persons addicted to the use of habit-forming narcotic drugs are found in all age groups above the age of 15 years. Relatively few come under observation during the first two decades of life, about one fifth in the third decade, and more than one third in the fourth decade, or about 57 per cent under the age of 40 years. About one third are represented in the two decade age periods of 40 to 60 years, and relatively few after 60 years of age. Drug addiction is therefore represented in each age period above 15 years, but with a greater concentration in the 25 to 45 year age groups.

These observations apparently indicate that addiction to the use of habit-forming narcotic drugs is widespread throughout the United States; that all classes and groups of the general population are affected in one way or another; that occupation, periods of life, nativity, sex, color, marital or educational status, are not exempting factors. It appears that drug addiction is somewhat like an endemic disease, for it is through and on the people. If this is true, drug addiction constitutes a medicosocial problem of concern and importance to local jurisdictions, to the state and to the nation. Although federal agencies are charged in law with certain functions respecting this medicosocial problem, it is nevertheless of sufficient importance to enlist the interests, activities and support of local and state governments; of local, state and national associations, and of official and nonofficial agencies and organizations to the end that a coordinate attack may serve in its solution.

The economic loss to communities caused by drug addiction should be of interest to the legislator, business interests, and the practical administrator of public affairs. An intangible but important aspect of the problem is the economic loss through addiction in the prime of life, and the suffering and depredation of individuals whose families are not infrequently impoverished thereby.

It is impossible to determine the exact number of narcotic drug addicts in the United States. Various estimates have been made, however, based on a variety of factors, and approached in different ways. A comprehensive publication appeared in 1924 by Kolb and DuMez, wherein previous estimates and surveys were reviewed and an estimate of the number of drug addicts calculated on the theoretical possible quantity of drugs available to satisfy the craving of addiction. Their estimate places the number as not greater than 150,000. These authors consider that probably the more accurate and correct estimate would be near 110,000.

Other estimates have been made, based on first hand contact with the problems of narcotic law enforcement. The number of narcotic addicts compiled from that source is estimated by the Bureau of Narcotics, of the Treasury Department, as not to exceed 100,000. Terry estimates that there are at least 90,000, based on an analysis of the legal distribution of drugs in Detroit. Other estimates have been made also which are not based on any standard bodies of observations.

It is highly probable, based on knowledge available, that there is not more than one narcotic drug addict to each thousand of the general population of the United States. Any estimate in excess of two per thousand of the general population may be considered, in the light of present knowledge, as an exaggeration. However, it is not so important to determine the exact number of narcotic drug addicts in a country as it is to determine the extent to which addiction affects the various groups or components of the population, and whether or not it constitutes a medicosocial problem demanding solution.

THE CAUSES OF ADDICTION

Ease of access to habit-forming narcotic drugs must be considered an important causative factor in addiction. The more important precipitating or immediate causes of addiction, however, are related to the previous uses of such drugs in medical treatment, to self treatment for the relief of pain, to recourse to drugs during emotional distress, to the influence and association with others who are habituated to their uses, to overcome drunkenness, and to indulgence for the sake of experience, curiosity, a thrill or bravado.

The more important predisposing or underlying causes of addiction are related to the inherent constitutional make-up of the individual. The nervously unstable person is more prone to embrace the habitual use of narcotic drugs than one with a stable constitution. This is one way of saying that those with mild psychic

disorders, or those of faulty personal constitution or mental make-up, constitute a variable proportion of addicts. An approach to the partial solution of narcotic drug addiction must therefore take into account the mental hygiene factors involved.

Drug addiction, like chronic alcoholism, becomes established at a much earlier age than is ordinarily supposed. It is usually established at a later period in life among those who handle drugs professionally or legally than among those unauthorized to handle narcotic drugs for professional or business reasons. In every hundred addicts authorized to deal in drugs, approximately four become addicts before 25 years of age, seventeen before 30 years, and forty-seven, or less than half, before 40 years of age. Among addicts unauthorized or unregistered to handle narcotic drugs for professional or business reasons, almost half acquire the habit before 25 years of age, and two thirds before 30 years of age.

The causative factors of addiction are found to be different in degree when comparison is made between those unauthorized to deal legally in narcotic drugs and those authorized to handle them. Among addicts licensed to deal in narcotic drugs for professional or business reasons, and who are accessible for study and observation, more than three fourths attribute their addiction to the previous use of these drugs in medical treatment or to self treatment for the relief of pain. Relatively few attribute their addiction to contact and association with other addicts, to a desire for experience, to satisfy curiosity, to obtain a thrill, or to their use during emotional distress. Among the unregistered group, almost half attribute their addiction to contact and association with other addicts. A proportion attribute their addiction to a desire for experience or bravado, to satisfy curiosity, to obtain a thrill, to allay emotional distress, or to overcome drunkenness. A proportion, however, attribute their addiction to the previous use of drugs in medical treatment and to self administration for the relief of pain.

PREVENTION OF ADDICTION

The enforcement of restrictive measures imposed by law, governing the importation, manufacture and distribution of narcotic drugs, bears a relation to prevention, since ease of access to such drugs is an associated causative factor of addiction. The first of these laws dealt more especially with safeguards surrounding the sale and distribution of drugs in an effort to limit their abusive uses. These local efforts, which are by no means uniform, eventually became crystallized into a federal measure for controlling commerce in narcotics. Inadequacies in these measures soon became apparent, and further elaboration in control was necessary, until in the United States today all manufacturers, dealers, pharmacists, physicians, dentists and veterinarians must be registered to deal legally in such drugs for professional or business reasons. A complete recording system is maintained of all imports, manufacture, sales and exports of these drugs.

But these measures for domestic control have been inadequate to meet the situation, since large quantities of habit-forming narcotic drugs are smuggled into the country each year. These supplies have their sources usually in countries where drugs are manufactured in excess of the medicinal and scientific needs.

The United States can be protected against this avalanche of contraband by an international agreement for limiting the world manufacture of narcotic drugs to the amounts required for medicinal and scientific purposes. The provisions of the Geneva Convention of 1931, to which the United States government is a signatory power, is intended to accomplish this purpose and further to control the movement of such drugs in international trade. The convention or treaty of 1931, if honestly and faithfully enforced by all countries, together with the existing measures for domestic control, should play an important rôle in the solution of the drug addiction problem in this country. The treaty was ratified by the United States Senate on March 31, 1932.

But restrictive laws governing the commerce in narcotics are not the only measures to be applied in the solution of this medicosocial problem. So long as there are drug addicts within the country, and so long as addicts are made through contact with other addicts, whose every motive and interest is centered on obtaining and maintaining a supply of drugs, there will be depraved men and women to supply them from any source or sources humanly possible. The need for destroying drug peddling is obvious, but the potential market for contraband must not be neglected.

The isolation and segregation of drug addicts with the object of treatment instead of punishment appears desirable and necessary, for their presence and contact with others in American communities is a potential danger and a causative factor in the production of further addiction. Their segregation and isolation should be for an indeterminate period, contingent on the individual concerned in somewhat the same way as the insane are segregated. A significant change in federal policy toward this phase of the drug problem occurred in 1929, when Congress authorized two institutions for the segregation and confinement of persons addicted to the use of habit-forming narcotic drugs who have committed offenses against the United States, including federal court, court martial, and consular court cases, for those placed on probation by such courts, and for those who may voluntarily seek treatment.

The control and management of these institutions is vested in the United States Public Health Service through a newly created Division of Mental Hygiene in the Office of the Surgeon General. One of these institutions is now being built near Lexington, Ky., designed to accommodate a thousand or more inmates, and the other has been located in the vicinity of Fort Worth, Texas. The objects, purposes and designs of these institutions are to rehabilitate, restore to health, and train to be self supporting and self reliant those who are admitted. In addition, the control, management and discipline is to be maintained for the safe keeping of the individual and the protection of the community. Industries are to be established to afford occupation, vocational training and education for inmates. Experiments are to be carried on to determine the best methods of treatment and research in this field, and the results disseminated to the medical profession and the general public to the end that states may make some provision and establish a public policy for helping to solve the problem of drug addiction. The functions of these institutions assume the character of a treatment and research center, of an educational, industrial, vocational and rehabilitation center with certain custodial features superimposed. These institutional provisions make an appeal to the humane instinct

and may play an important rôle in the prevention of addiction. Nevertheless, other educational factors should not be neglected.

Studies of the quantities of narcotic drugs legally distributed to retailers and dispensers in various sections of the United States indicate wide variations in the per capita requirements of the general population. Great diversity of needs is also observed in different parts of the same communities. The diversified per capita requirements for narcotic drugs for medical purposes in the several communities of the United States, and in the same communities at different times, involve a wide variety of factors, none the least of which concern the choice of the individual practitioner. Investigations, however, have revealed that narcotic drugs are prescribed when indispensable and when no substitutes are available or can be employed. They are also prescribed inadvisedly, perhaps, and contrary to pharmacologic facts and opinions, which are so valuable to the general practitioner. They are unfortunately prescribed, in some instances, for the mere satisfying of addiction. It has already been pointed out that addiction is more readily induced in some persons than in others, one important predisposing or underlying cause being an inherent mental or nervous instability. Since it is known that addiction may be induced by the injudicious use of drugs in persons apparently free from any mental or nervous instability, then it is necessary that greater care must be exercised in their administration to avert this result in the unstable.

It is possible that the abuses of narcotic drugs may be avoided or prevented by giving consideration to the possibility of substituting non-habit-forming drugs whenever possible. When the use of habit-forming drugs is essential, however, care should be taken not to give larger or more frequent doses than are necessary to achieve the desired end. Patients requiring daily administration of habit-forming drugs should be seen often by the practitioner, and the amount of drugs ordered or supplied should not exceed that required by the patient until seen again. Administration on the part of nurses should be limited to prescription, and changes in treatment should be in writing. Patients should not be informed of the name or dose of the drugs administered, and hypodermic administrations should be avoided if possible, and never self administered. The use of the drug should be discontinued immediately when no longer required; and if a craving has resulted, close supervision and appropriate treatment should be maintained until the patient has been rendered independent of the drug.

Valuable results in the judicious use of narcotic habit-forming drugs might be obtained through the medium of instruction to professional students and to practitioners, and through the medium of an authoritative memorandum for guidance in this difficult and important problem. This phase of the problem has been approached through the medium of the American Medical Association. THE JOURNAL has published a series of articles on the indispensable uses of narcotic drugs. These articles were prepared by various authors and are now available in book form. The publication has been issued in cooperation with the Committee on Drug Addiction of the Division of Medical Science of the National Research Council and the Division of Mental Hygiene of the United States Public Health Service, and made possible through contributions by the Bureau of Social Hygiene.

Experience has shown that some practitioners order for or supply narcotic drugs to individuals simply to enable those addicted to satisfy their craving, or the circumstances of supply are of such a character as to cast doubt on the method and intent as being bona fide medical treatment. Quantities of drugs have been prescribed over long periods of time for persons seen at long intervals or not seen at all; drugs have been sent by post for some alleged urgent need or have been obtained concurrently from two or more practitioners. In some instances, large quantities of drugs have been purchased or supplied practitioners and used for administration to themselves. It is evident that narcotic drugs have been supplied and used without the necessity for medical treatment and in contravention of the intent of the law.

International treaties and the laws of the land have rightfully made certain professional groups the custodians of these dangerous narcotic drugs. Thinking people of this and other countries believe they have not misplaced this trust, and they expect these drugs to be used for bona fide medical and scientific purposes. The abusive uses of these dangerous drugs and the violations of this trust are problems to be dealt with, corrected and prevented by the concerted actions of representative organizations and leaders among these professional groups in cooperation with law enforcement agencies having responsibilities in the matter.

The problem of drug addiction demands that further research studies and investigations be made, and the results applied in its solution and in the prevention of addiction. The Committee on Drug Addiction of the Division of Medical Science of the National Research Council, supported by the Bureau of Social Hygiene in cooperation with the Bureau of Narcotics of the Treasury Department and the United States Public Health Service, two federal governmental agencies most concerned with this problem, has inaugurated certain fundamental research activities in this field.

These research studies are of a chemical and biologic character. The first relates to the chemistry of the opium alkaloids, the activity being carried on at the Cobb Chemical Laboratory at the University of Virginia with a view to finding a preparation derived from opium, having all the qualities of a narcotic drug but without addiction properties. The discovery of such a substance would go far toward the prevention of drug addiction. The second, or biologic, studies have reference to the pharmacologic action of these preparations with the object of determining their toxicity and physiologic properties on lower animals. These studies are being carried on in the Department of Pharmacology at the University of Michigan Medical School. Further clinical investigations as to the value of these substances in man are being inaugurated by the Public Health Service incident to the supervising and furnishing of the medical services in federal penal and correctional institutions, and to the establishment of the United States narcotic farms. Progress reports of these studies and investigations are being published from time to time.

The present status of knowledge concerning the nature of drug addiction leaves much to be desired. The phenomena of drug tolerance and addiction, the disturbances in water, lipoid and carbohydrate metabolism, the dysfunction of the endocrine and vegetative nervous systems, the effects of these drugs on the mind, and the euphoria experienced from the continu-

ous use of opium or its derivatives are all subjects on which great diversities of opinion exist. They demand further coordinate research for their solution. The exact nature of narcotic drug addiction will be better understood through a chemicopharmacologic, biochemical, psychobiologic and medical approach.

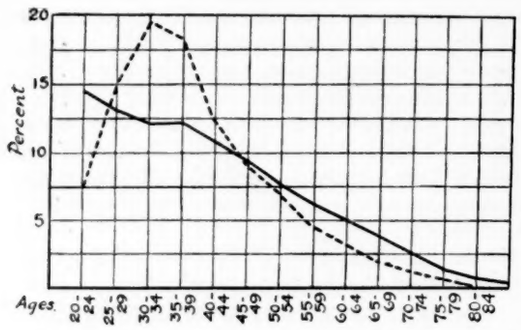

Fig. 1.—Comparison of ages of drug addicts of the United States with age distribution of general population (drug addicts coming within the purview of the law during the period July 1, 1929, to June 30, 1930, compared with age distribution of general population according to U. S. Census of 1930): solid line, population; broken line, all addicts.

The necessity of prolonged or life-long administration of narcotic drugs is not universally held in this country. The fact that it is held by some individuals makes it difficult to assume that the continuous administration in nondiminishing doses is necessarily inconsistent with ethical medical treatment. It is apparent that this phase of the subject is much confused with and involved in the much broader question of ambulant versus institutional treatment of drug addiction. In the United States the ambulatory treatment of drug addiction, while theoretically possible, has been condemned as impracticable by the majority of medical opinion. According to the modern conception, crystallized in socially and legally sanctioned laws, drug addicts or persons requiring continuous and nondiminishing doses of opium or its derivatives are unpopular and regarded as a menace to the social order. They appear to constitute a medicosocial problem demanding institutional segregation and treatment. There is, however,

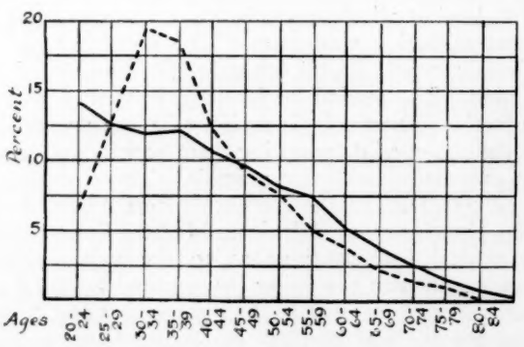

Fig. 2.—Comparison of ages of male drug addicts of United States with age distribution of general population (male drug addicts coming within the purview of the law during the period July, 1929, to June 30, 1930, compared with age distribution of general population according to U. S. Census of 1930): solid line, population; broken line, male addicts.

no treatment for drug addiction from the standpoint of specific cure that will miraculously operate to rid drug addicts of their addiction.

The treatment of drug addiction automatically divides itself into three phases, involving, first, the detoxication or physical rehabilitation stage; second, the emotional stabilization and reeducational phase, and, third, the social placement and community supervision phase.

The problem of institutional treatment, however, must take into account the diverse motives or underlying reasons for seeking treatment, the incidence of intercurrent diseases and defects in such a group, the great differences in the types of personalities involved, and the need for protecting the institutional community against the weaknesses and cupidity of its component individuals.

There are, of course, some persons addicted to the use of habit-forming drugs who sincerely desire to throw off the so-called slavery of the drug, but this sincerity vanishes when withdrawal symptoms appear. There are those who seek treatment through coercion by friends or relatives, the individual having little sincerity or desire to throw off the habit. Then, too, there are those who seek treatment because of their desire to impress the court or court official. Others seek treatment because an institution offers a convenient refuge from the police, because of a desire to reduce the daily dose of the drug, thus lessening the expense of maintaining themselves in a future daily supply, and still others because of their need for maintenance and support.

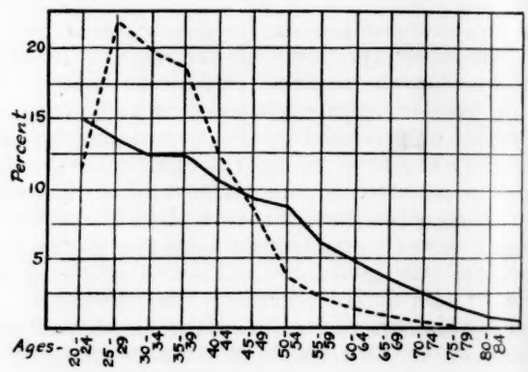

Fig. 3.—Comparison of ages of female drug addicts of United States with age distribution of general population (female drug addicts coming within the purview of the law during the period July 1, 1929, to June 30, 1930, compared with age distribution of general population according to U. S. Census of 1930): solid line, population; broken line, female addicts.

The intercurrent diseases observed among these people embrace the whole category of medicine, and their needs involve provision for the ambulant, semiambulant, bedridden, and convalescent sick. The diverse personalities involved point to the need for appropriate classification and groupings as a necessary corollary to treatment, based on first-hand knowledge of the antecedent, social, educational, industrial and economic background, together with an analysis of the character traits of the individual. The appropriate classification and grouping of these people within an institution is important for rehabilitation purposes and for the safety and protection of the institutional community and the community at large.

THE CHARTS

Figure 1 shows the proportional distribution of ages of addicts in five-year groups. The solid line shows the proportional distribution of ages 20 and over in the general population; the broken line shows the corresponding age distribution of addicts. It is to be seen that in ages 20 to 24 the proportional representation of addicts is less than that of the general

population of the same age; in ages 25 to 40, the proportional representation of addicts is greater, being approximately 3 to 2 as compared with that of the general population. The proportion of addicts over 45 years of age is, on the other hand, less than the proportion of persons over 45 years of age in the general population.

Figure 2 shows the proportional distribution of ages of male addicts in five-year groups. The solid line indicates the proportional distribution of males of various ages in the general population, and the broken line, the proportional distribution of ages of male addicts. It is to be noted again that there is a deficiency in the proportion of addicts in ages 20 to 24, an excess in ages 25 to 40, and a proportional deficiency in ages 45 and over.

Figure 3 shows the proportional distribution of ages of female addicts in five-year groups. Corresponding with the former graphs, the solid line indicates the age distribution of females in the general population, and the broken line, the age distribution of females who are addicted to the use of narcotic drugs. The distribution is essentially the same as in the case of the males; that is, a proportional deficiency in the years 20 to 24, an excess in the years 25 to 40, and a deficiency in ages over 45.

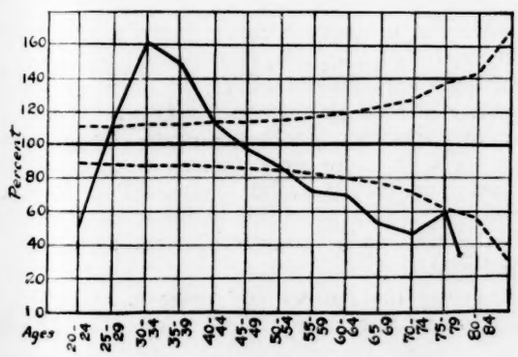

Fig. 4.—Deviation of ages of addicts from expectancy (the excess and deficiency of addicts in different age groups as compared with the general population; drug addicts coming within the purview of the law during the period July 1, 1929, to June 30, 1930); broken line, number of people in different age groups used as the base; solid line, index of the number of addicts in different age groups; ± 3 (S. D.) the odds are about 1 to 400 that the excess or deficiency of the number of addicts cannot be due to chance when it falls outside the broken line zone.

Figure 4 shows the age distribution of addicts of both sexes as compared with the age distribution of the general population used as the base, the 100 per cent line. The zone included in the broken lines may be considered as the zone of probability; deviations beyond this zone cannot be attributed to chance, the odds being approximately 1 against 400. It is to be noted, therefore, that the deficiency below 24, the excess between ages 25 and 40, and the deficiency of the proportion of addicts after the age of 45 are statistically significant.

Figure 5 shows the distribution of medicinal opium sold to licensed retailers in the different states as obtained from a sample study of sales by manufacturers and wholesalers in 1930. It is to be noted that thirty-one states have an annual opium consumption of less than $^{3}/_{10}$ grain per capita; fifteen states have an opium consumption of from $^{3}/_{10}$ to $^{6}/_{10}$ grain; two states have a per capita consumption of from $^{9}/_{10}$ to $1^{2}/_{10}$ grains, and in one state the annual consumption of opium, as shown by our sample, exceeds $1^{2}/_{10}$ grains per capita. This wide variation in the per capita consumption of opium in the different states indicates that certain states are using an excessive amount of this drug.

Figure 6 shows the distribution of morphine sold to licensed retailers in the different states as obtained from

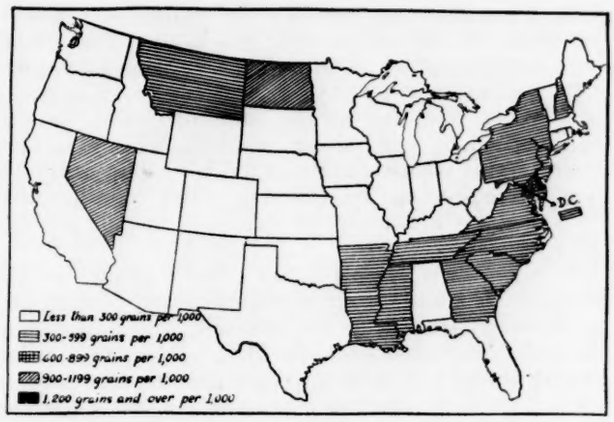
DC
Less than 300 grains per 1,000
300-599 grains per 1,000
600-899 grains per 1,000
900-1199 grains per 1,000
1,200 grains and over per 1,000

Fig. 5.—Distribution of medicinal opium to licensed retailers and dispensers (grains per thousand of population).

a sample study of sales by manufacturers and wholesalers in 1930. It is to be noted that two states have an annual consumption of morphine of less than $^{14}/_{100}$ grain per capita; seventeen states have a consumption of from $^{14}/_{100}$ to $^{28}/_{100}$ grain; fourteen states a consumption of from $^{28}/_{100}$ to $^{42}/_{100}$ grain; ten states a consumption of from $^{42}/_{100}$ to $^{56}/_{100}$ grain, and in six states the annual consumption of morphine, as indicated by our sample, exceeds $^{56}/_{100}$ grain per capita. There is again a wide variation in the per capita consumption of morphine in the different states, indicating an excessive use of morphine by certain states.

Figure 7 shows the distribution of codeine sold to licensed retailers in the different states as obtained

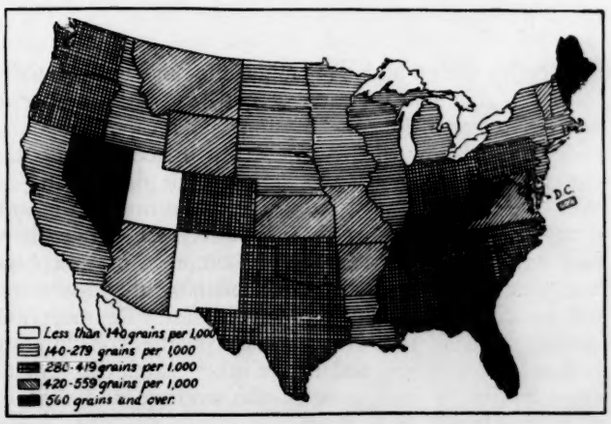

Fig. 6.—Distribution of morphine to licensed retailers and dispensers (grains per thousand of population).

from a sample study of sales by manufacturers and wholesalers in 1930. It is to be noted that twenty-three states have an annual consumption of codeine of less than $^{36}/_{100}$ grain per capita; twenty-four states have a consumption of from $^{36}/_{100}$ to $^{72}/_{100}$ grain; one state a consumption of from $1\,^{1}/_{10}$ to $1\,^{44}/_{100}$, and in one state the annual consumption of codeine, as indicated by our sample, exceeds $1\,^{44}/_{100}$ grains per capita.

The same wide variation in the per capita consumption is present in codeine as in other narcotic drugs.

Figure 8 shows the distribution of cocaine sold to licensed retailers in the different states as obtained from a sample study of sales by manufacturers and wholesalers in 1930. It is to be noted that thirty-five states have an annual consumption of cocaine of less than $^{14}/_{100}$ grain per capita; nine states have a consumption of from $^{14}/_{100}$ to $^{28}/_{100}$ grain; three states have a consumption of from $^{28}/_{100}$ to $^{42}/_{100}$ grain; one state has a consumption of from $^{42}/_{100}$ to $^{56}/_{100}$ grain, and in one state the annual consumption of cocaine, as indicated by our sample, exceeds $^{56}/_{100}$ grain per capita. This wide variation in the per capita consumption of cocaine in the different states indicates that certain states are using an excessive amount of this drug.

The last map of this series gives a picture of the comparative consumption of morphine and codeine sold to licensed retailers in the different states by manufacturers and wholesalers in 1930. From an *a priori* consideration, it is to be expected that the consumption of codeine is a substitute to more dangerous narcotic drugs. The comparison, however, shows that, in general, states with a high consumption of morphine usually have a higher consumption of codeine, and vice versa. In twelve states the consumption of both morphine and codeine is below the average; in fifteen states the consumption is about average in both drugs, and in nine states there is an excessive consumption of both drugs. This indicates that in thirty-six states there is a parallelism between the consumption of morphine and that of codeine. In the remaining thirteen states the association is reversed; in seven states the morphine consumption is in excess while codeine consumption is less than average, and in six other states the codeine consumption is in excess of the average and that of morphine less than average.

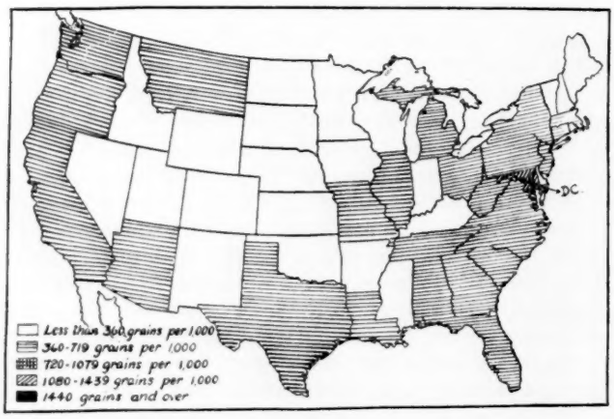

Fig. 7.—Distribution of codeine to licensed retailers and dispensers (grains per thousand of population).

CONCLUSION

This paper briefly deals with an epidemiologic approach to the drug addiction situation in the United States; it points out that it is a medicosocial problem of interest and concern to local, state and national jurisdictions, organizations and associations; that a public policy which treats drug addiction solely as a penal and correctional problem is not contributing to its solution; that immediate and remote causes of drug addiction bear a relation to the measures adopted for its prevention in the past, the present, and those pending and contemplated; that measures for prevention demand the full cooperation and counsel of organized agencies representing the professional groups concerned, with law enforcement agencies having responsibilities in the matter; that prevention and treatment necessitate an appreciation of the psychobiologic, chemicobiologic and pharmacobiologic factors involved, and that fundamental research is essential for the establishment of more accurate knowledge concerning the chemistry of alkaloids, of more reliable information respecting their biologic effects in lower animals and in man, and of a more satisfactory evaluation of the many psychobiologic factors intergrading delinquency. Basic facts on these subjects may not be established this year or the next, but systematic and scientific studies by technically trained groups of workers should pave the way to a better understanding of this and related problems.

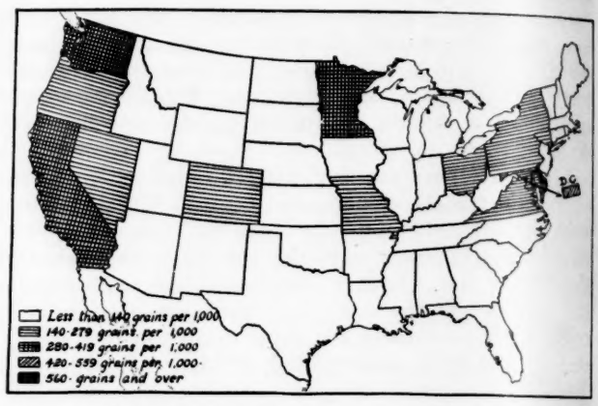

Fig. 8.—Distribution of cocaine to licensed retailers and dispensers (grains per thousand of population).

Unfurling the banner of medicine over the drug addiction situation in the United States is made possible through legislative act. This may be interpreted as a sign of the times, and an expression, first, of dissatisfaction with previous public policies that offered no solution to the problem, and, secondly, of the need for a more fundamental biologic approach. This legislation is all the more expressive when it is appreciated that for the first time in history a general public is showing a wider interest in disorders of the mind and is beginning to interpret social failures, unconventional beha-

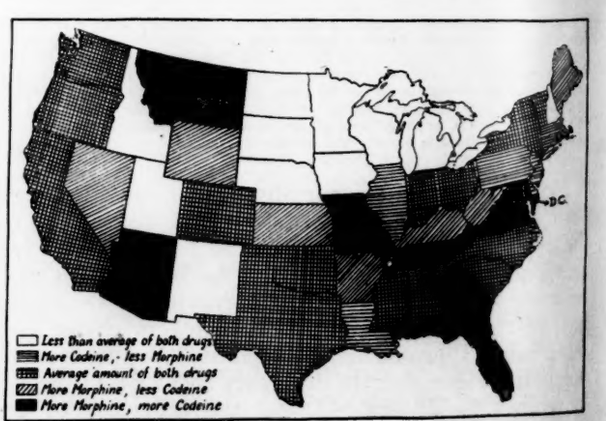
DC
Less than average of both drugs
More Codeine, less Morphine
Average amount of both drugs
More Morphine, less Codeine
More Morphine, more Codeine

Fig. 9.—Comparative distribution of morphine and codeine to licensed retailers and dispensers (grains per thousand of population).

vior, and conduct in terms of personality factors having behind them mental, or, more technically, psychobiologic implications. These biologic interpretations, made by an interested public, have been crystallized into the law of the land as affecting the drug addiction problem.

But the general public is also recognizing that public policies of the future, dealing with groups of the population unable to comply with the standards of behavior and conduct maintained by society, must take into account those biologic factors, such as individual antecedent history and heredity, experience and education, and physical and mental status, that may bear on the deviation of a personality in a pathologic or unsocial direction. Then, too, it is being generally recognized that community sources of warped and distorted personalities must be uprooted; that such personalities must have early and adequate treatment best suited for the individual and for the safety and protection of the community; that underlying causes of these biologic misfits must be sought by study and investigation, and that means must be adopted to render less threatening the menace of increase in their number.

Whereas recent legislation requires that the solution of the narcotic drug addiction problem shall be largely a federal activity embracing administrative, investigative and research functions, nevertheless its medicosocial and biologic significance becomes more crystallized when these functions are imposed on the medical profession. It may be significant, therefore, that the United States Public Health Service has been designated ex officio, unsought as it were, the coordinator for carrying out those research functions relating to the eventual solution of the problem.

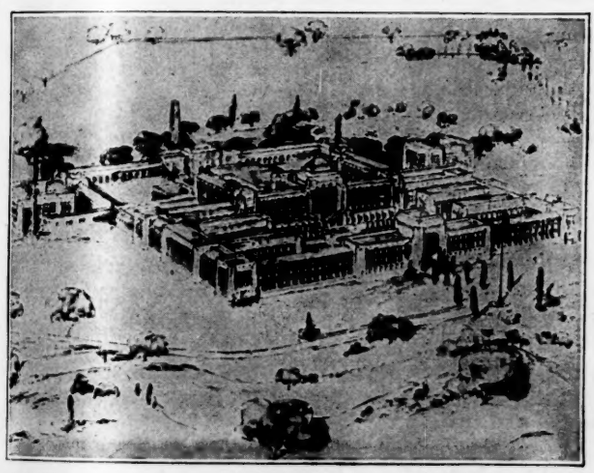

Fig. 10.—The first United States narcotic farm, at Lexington, Ky.

In concluding this discussion of drug addiction and measures for its prevention in the United States, attention should be called to some experiences of the past. These teach us that depraved men and women are eager and ready to raid those supplies destined for medical and scientific uses when contraband narcotic drugs are not available or are unusually difficult to procure. They will seek every means to divert such supplies from legitimate channels. The adoption of a public policy of segregating, isolating and treating drug addicts as a means of solving this potential menace to the legal supply of dangerous habit-forming narcotic drugs should serve to safeguard the interests of those professional and business groups who are custodians of these drugs.

FOCAL ENLARGEMENT OF THE TEMPORAL BONE AS A SIGN OF BRAIN TUMOR

ROSS H. THOMPSON, M.D.
PHILADELPHIA

Bony thickening or hyperostosis overlying tumors of meningeal origin in some parts of the skull has within recent years gained a secure foothold in cerebral pathology. Spiller,[1] Cushing,[2] Penfield,[3] Winkleman [4] and others have contributed to our knowledge of its occurrence and characteristics. It is a slowly growing, hard prominence of uncertain nature, believed by some to be secondary to invasion of the skull by the intracranial tumor accompanied by bone formation. Spiller [5] stated that he was of the opinion that hyperostosis of the cranium immediately above a fibroblastoma may not invariably be produced by infiltration of tumor cells.

My object in this paper is to record and discuss two instances of external prominence of the squamous portion of the temporal bone in children, directly overlying an intracranial tumor and not due to hyperostosis but to bulging. In each, the occurrence was sufficiently early to furnish the principal evidence of the presence and localization of the growth, a meningeal fibroblastoma in one and a glioma in the other.

REPORT OF CASES

CASE 1.—*Bulging of the squamous portion of the right temporal bone directly overlying a meningeal fibroblastoma.*

History.—A girl, aged 10 years, admitted to the service of Dr. William G. Spiller in the University of Pennsylvania Hospital, Dec. 12, 1931, had had attacks of headache and vomiting just prior to Dec. 10, 1930, on which date Dr. J. H. Dewey of Trenton, N. J., made an examination and found a convergent strabismus, vision five fifths in each eye, and a marked bilateral optic neuritis. Dec. 18, 1930, the eyes were parallel, with no signs of muscular weakness, and the optic neuritis was much less marked in degree. December 31, the neuritis was again noticed to be subsiding. Jan. 3, 1931, she was sent to Dr. Spiller, who recommended admission and further study in the University of Pennsylvania Hospital. The child refused to stay and her father decided to take her home. The family stated that since this time she seemed to be perfectly well until two weeks before admission, when she complained of being unable to see in the right eye. She was again sent to Dr. Spiller. On the day before admission the mother, while washing the girl's head, noticed for the first time a hard lump just above the right ear.

Examination.—At the time of admission, examination by Dr. Spiller revealed weakness of the left side of the face of the upper neuron type; deviation of the tongue to the left on protrusion, and to the right when resting within the mouth; a very mild degree of paresis of the left extremities, and a somewhat exaggerated left patellar reflex. No disturbance of sensation could be detected. Tone and synergy throughout the musculature were normal.

A decided bulge was noted in an area 3 cm. in diameter of the squamous portion of the right temporal bone just above the ear.

Read before the Philadelphia Neurological Society, Feb. 26, 1932.
From the Neurological Department of the University of Pennsylvania.

1. Spiller, W. G.: Hemicraniosis and Cure of Brain Tumor by Operation, J. A. M. A. **49**: 2059 (Dec. 21) 1907.
2. Cushing, Harvey: Cranial Hyperostosis Produced by Meningeal Endotheliomas, Arch. Neurol. & Psychiat. **8**: 139 (Aug.) 1922.
3. Penfield, W. G.: Cranial and Intracranial Endotheliomata, Hemicraniosis, Surg., Gynec. & Obst. **36**: 657 (May) 1923.
4. Winkleman, N. W.: Hyperostosis and Tumor Infiltration of Base of Skull Associated with Overlying Meningeal Fibroblastoma, Arch. Neurol. & Psychiat. **23**: 494 (March) 1930.
5. Spiller, W. G.: Cranial Hyperostosis Associated with Underlying Meningeal Fibroblastoma, Arch. Neurol. & Psychiat. **21**: 637 (March) 1929.

Ophthalmologic examination showed a choking in each disk of 3 diopters with no hemorrhage or exudates, and a definite left homonymous hemianopia.

Roentgen examinations were made by the staff of Dr. Henry K. Pancoast and interpreted by him. The examinations of December 14, 16 and 17 showed moderate convolutional atrophy and increased prominence of the coronal suture. There was a doubtful atrophy over the top of the dorsum sellae. A metasellar lesion was suggested as the cause. A thinning and bulging of the bone in the right temporoparietal region was demonstrated by a tangential view and a moth-eaten appearance in this region by lateral stereoscopic views. In the tangential view the tables could not be made out and for this reason a separate tumor of the bone was thought of. Because of the difference between the roentgen localization of a metasellar lesion and the clinical one of a temporal lobe tumor, a ventriculographic examination was advised.

A ventriculographic examination was made, December 22, by Dr. Reed Harrow in the service of Dr. Charles H. Frazier. Dr. Pancoast stated that the sagittal view showed no filling of the right lateral ventricle or the third ventricle. The anterior horn and body of the left ventricle were displaced to the left. The lateral view showed a fairly normal left lateral ventricle, with no filling defect and little, if any, dilatation. The third ventricle, aqueduct and fourth ventricle could not be visualized. The right lateral view showed no interchange of air into the right lateral ventricle, indicating a block at the foramen of Munro. A block in the third ventricle would have caused dilatation of the left lateral ventricle. His conclusions were that there was a large mass lesion in the right side in the temporoparietal region.

Operation.—Dr. Charles H. Frazier, on operating, found the bone to be very thin at the location of the bulge, so thin that by its pressure alone the drill penetrated the skull and dura. Beneath and adherent to it, a large extradural growth was located and removed.

The gross specimen was examined by Dr. William Duane, Jr., who found that it consisted of some large and small pieces of tumor, dura, cyst wall and an operative bone flap. The bone flap, weighing 17 Gm. and measuring 5 by 11 cm., was extremely thin, light and translucent.

The pathologic diagnosis of the tumor by Dr. Bernard J. Alpers was that it was a malignant type of fibroblastoma.

On microscopic examination of the bone flap, Dr. Bernard J. Alpers found that the bone overlying the tumor showed a marked infiltration of tumor cells. There was much bone destruction but no evidence of bone formation.

CASE 2.—*Bulging of the squamous portion of the right temporal bone directly overlying a glioma; less marked bulging of the squamous portion of the left temporal bone.*

History.—A girl, aged 9 years, admitted to the service of Dr. William G. Spiller in the University of Pennsylvania Hospital, Aug. 12, 1929, complained of general convulsions with aurae of ringing and roaring in both ears and headaches for a period of two years. There was nothing in the seizures of localizing value excepting possibly the auditory character of the aurae. They occurred rather frequently at intervals of from one to four days. She did not fall because the aurae were sufficiently early and constant to afford protection. Large doses of phenobarbital were necessary to give relief. The headaches were severe, frequent, and confined to the frontal region.

Examination.—The patient was of average intelligence and presented no departure from the normal in a physical examination with the following exception: In the area of the squamous portion of the right temporal bone just above the zygoma and external auditory meatus and a little anterior to the ear, a swelling was noted. It was firm, smooth and not tender, and blended off imperceptibly into the surrounding areas. It was about three fingerbreadths wide and about 1 cm. high at its highest point. This slight enlargement had been noticed for one year by the family physician and seemed to him to be slowly becoming more prominent. One week after admission a slight painless swelling was noticed in the squamous portion of the opposite temporal bone, 1½ inches above the external auditory meatus and one-half inch in diameter.

These swellings in the squamous areas were believed to be due to bulging as a result of increased intracranial pressure.

A roentgen examination, July 24, 1929, was interpreted by Dr. Henry K. Pancoast as showing convolutional atrophy, most marked in the frontoparietal region, widening of the coronal suture, no sellar changes, and some calcification in the region of the right middle fossa. There was some bulging and thinning of the bone in the right temporoparietal region. The next examination, August 22, confirmed the calcification, showed no sellar changes, and displayed the bulging. A further study, Jan. 30, 1930, showed the swelling on the right side to be slightly greater. There was beginning slight atrophy of the dorsum. The convolutional atrophy had increased and the coronal suture was more prominent.

Ophthalmologic examination, February 2, showed 5 diopters of choking in each eye.

Ventriculographic examination, made by Dr. W. G. Gardner in Dr. Frazier's service, February 14, was thus read by Dr. Pancoast: In the anterior view there was air in each lateral ventricle, but both, with the midline structures, were displaced decidedly to the left. Visualization of the third ventricle in this view was uncertain. In addition there was a large collection of air, presumably in a cyst, over the right side, well lateral to the lateral ventricle. In the lateral views only the cyst was represented by air in the right ventriculogram. Evidently the left ventricle was the only one tapped and air in the right entered from the left by way of the foramen of Munro. Air in the cyst was present evidently from direct tap.

Operation by Dr. Charles H. Frazier, February 14, revealed a gliomatous cyst at the base of the right temporal lobe pushing the lobe upward. It was evacuated and further tumor tissue removed until the white matter of the brain could be seen.

Examination of the bone flap was not made.

COMMENT

The skull cap is constructed to anticipate all normal contingencies in the development and protection of its contents; also to anticipate certain intracranial pressures and degrees of pulsation. It owes its success to manifold potential variabilities, based on shape, simplicity and plasticity of structure, delay in growth and in suture closures, location of the fontanels, process of individual bone growth, and other characteristics.

From the occasion of its venture through the birth canal to advanced age, its ingenious architecture lessens the dangers of injurious contacts. It is thickest and strongest where necessity most demands: from the vertex posteriorly to the foramen magnum, and from the vertex laterally by anterior and posterior buttresses. It is thinnest in the region of the squamous portion of the temporal bone, where plasticity and expansibility are most needed for the natural development of those areas of the cerebral hemispheres identified with powers of discrimination and acquired knowledge.

All the bones of the skull in early life are elastic and comparatively soft and yielding. If a blow is inflicted on the vault in a young child, the most usual effect, if the blow is not too sharp or too severe, as far as the bone is concerned, is an indenting or bulging rather than a fracture. Treves [6] cited illustrations of the yielding character of the young child's skull in the gross deformities of the head that certain Indian tribes produced in their offspring by applying tight bandages to the part in infancy. He stated that in the College of Surgeons museum there were many skulls of flat headed Indians that showed to what extreme this artificial deformity of the head may be carried. Guemot was referred to by Treves as asserting that much

6. Treves, Frederick: Surgical Applied Anatomy, Philadelphia, Lea Brothers & Co., 1901.

deformity of the head may be produced in infants by the practice of allowing them always to lie on one side of the body. Here the deforming agent is simply the weight of the head.

Even in adults the skull is much less brittle than is commonly supposed, and notions as to the breaking ability of the cranial bones are apt to be erroneous.

Just as the cranial vault may be influenced by extracranial force, so it may be expected to be influenced by undue increase of intracranial force. Schüller [7] in particular has called attention to skull changes resulting from chronic excessive intracranial pressure, especially in the child. He stated that, if the pressure lasts a long period of time, as in chronic hydrocephalus, tumors, cysts, tubercles or gummas, it may cause by its pulsating character an extensive pressure erosion of the inner surface of the skull. He referred to one instance of circumscribed bulging and thinning of the cranial vault due to direct tumor pressure. There existed a palpable bulging of the squamous portion of the left temporal bone in a man, aged 32, who had a tumor in that region. The nature of the growth was not stated, but the roentgenogram showed that the skull wall was thinned and bulged out like a watch crystal. This is the only instance of circumscribed thinning and bulging due to direct tumor pressure that could be found in the literature, attention being called to it by Dr. Henry K. Pancoast. It is to be noted that the locality involved coincides with that of the two cases herein recorded; but also that the bulge occurred in a man, aged 32.

Sachs [8] has referred to the marked thinning of the bones of the skull from increased pressure occurring particularly in children, mostly the result of and associated with the internal hydrocephalus which usually accompanies a lesion in the posterior fossa.

It would appear that the cause or causes of the bony prominences in these two children were the result of localized and general intracranial pressure operating over a duration of time of unknown length. Also that this pressure exerted itself in areas in which the natural preparedness of the bone is not as great as in other portions.

In case 1 the tumor was of meningeal origin and had no buffer between it and the thin squama directly overlying, which according to roentgen and microscopic evidence was invaded by tumor cells and thereby increasingly weakened. The dura adherent to the bone pinioned the tumor to the skull vault and created a tendency to limit direct pressure outward and inward in the immediate neighborhood. Inward pressure on the optic radiation would account for the left homonymous hemianopia. Outward pressure would account for the thinning and bulging of the bone. Pressure internally and above in the direction of the internal capsule would account for the pyramidal tract symptoms. The growth probably slowly decompressed itself by a gradual formation of the lump. The absence of symptoms and the improvement in the optic neuritis one year before admission probably were due to the increased cranial capacity occasioned by the bulge, although the latter was not discovered until one day before admission.

In case 2 the tumor did not arise from the meninges. It was of deep origin and was shown by the ventriculogram to have shifted the lateral ventricles and midline structures to the left in the direction of the opposite squama. The total lack of observable neurologic changes may thereby be accounted for by the giving way of the right squama, and also by a slighter degree of bulging of the left squama, thus creating an enlarged intracranial capacity by an increase in the cranial diameter between the two squamae.

7. Schüller, Arthur: Roentgen Diagnosis of Diseases of the Head, translated by F. F. Stocking, St. Louis, C. V. Mosby Company, 1918.
8. Sachs, Ernest: The Diagnosis and Treatment of Brain Tumors, St. Louis, C. V. Mosby Company, 1931.

SUMMARY

1. Two instances of focal bulging in the squamous portion of the temporal bone, due to an underlying brain tumor, occurred in children, aged 9 and 10 years, and provided the principal localizing sign for diagnosis and operation.

2. One was due to a meningeal fibroblastoma; the other, to a glioma.

3. In each, cystic formation had occurred, no doubt indicating rapid development in size.

4. By displacement of midline structures, a milder degree of bulging in the opposite squama was produced by the glioma.

5. The bone flap immediately above the meningeal fibroblastoma was shown by microscopic examination to be invaded by tumor cells.

133 South Thirty-Sixth Street.

Clinical Notes, Suggestions and New Instruments

CHANCRE OF THE MALE BREAST SIMULATING PAGET'S CANCER OF THE NIPPLE

JOHN G. MENVILLE, M.D., NEW ORLEANS

The incidence of primary syphilis in the human breast is relatively rare. Buckley [1] in 1894 reported that 12.5 per cent of the extragenital lesions occur in the breast. In 1897, Fournier [2] found that the percentage was 5.1 and that only 5 per cent of the lesions occurred in the male breast.

Syphilis of the breast may manifest itself in any of the three classic stages; namely, primary (chancre), secondary and tertiary (gumma) lesions. These entities are amply described by Gravagna,[3] Deaver and McFarland [4] and others.[5]

The rarity of the condition and the problem in diagnosis that this case presented prompted the following case report:

A white man, aged 72, presented himself at the clinic with a complaint of "sore nipple" on the left side. Six weeks previously (March 29, 1923) he had been injured at this site during sexual intercourse, in a house of ill fame. The family and the past history were essentially negative except for gonorrhea at the age of 26, complicated by orchitis of the right testicle. He had had repeated attacks of urethral discharge since that time. He was treated for chancroids twenty-seven years previously.

The patient was slightly obese and had an alcoholic facies. On admission, the pulse and temperature were normal. There was slight enlargement of the lymph nodes in the cervical and epitrochlear regions.

From the Surgical Pathological Laboratory, Department of Surgery, Johns Hopkins Hospital and University, Baltimore.

1. Buckley: Syphilis in the Innocent (Syphilis Isonatium), New York, 1894.
2. Fournier, J. A.: Extragenital Chancres, Paris, Rueff et Cie, 1897.
3. Gravagna: Chancre on Nipple, Gums, Tongue, Due to Lactation: Cases, Arch. ital. di dermat., sif. **2**: 72-77 (Oct.) 1926; Sifilomi Primari della Mamelle; Sifilide da Allattaments, Boll. d. mal. ven. sif. e. d. Pelli., Rome **5**: 96, 1905, and Syphilis, Paris **3**: 588, 1905.
4. Deaver, J. B., and McFarland, Joseph: The Breast: Its Anomalies, Its Diseases, and Their Treatment, Philadelphia, P. Blakiston's Son & Co., 1917.
5. Ambrosoli: Di Una mallatia della Glande Mammaria, Gaz. Med. Clin. Ital., Lombardy, 1864. Barthelemy: Gommes syphilitique du sein, Bull. Soc. franç. de dermat. et syph. **7**: 38, 1896. Vennes, J.: Chancre multiple du sein, Montpellier méd. **20**: 549, 1905.

The right epididymis was moderately indurated. The right and left lobes of the prostate were firm and slightly enlarged. coughing produced a slight impulse in the right external inguinal rings and a small invisible hernia in the dilated left inguinal ring.

The left breast was slightly higher than the right. The distance from the suprasternal notch was 22 cm. to the left breast and 23.5 cm. to the right nipple. There was redness about the

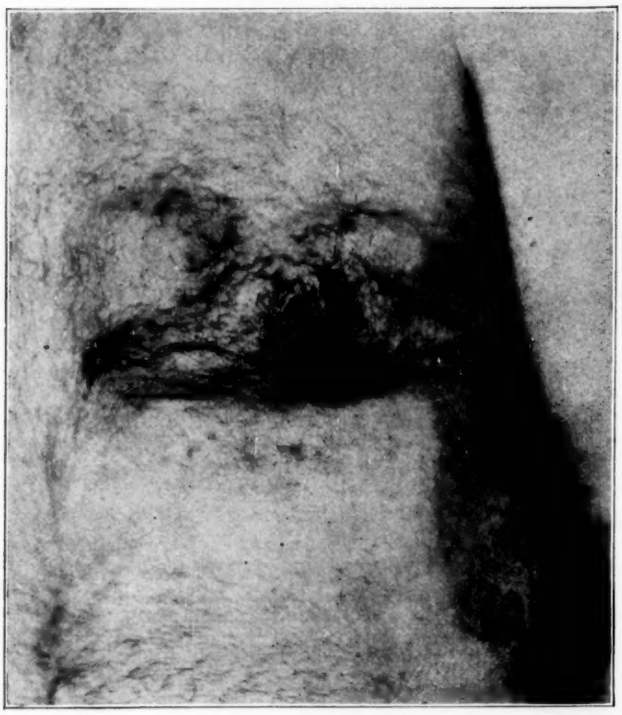

Fig. 1.—Chancre of a male breast showing the nipple surrounded by multiple excoriations.

left nipple which extended slightly beyond the areola (fig. 1). Immediately around the left nipple were abundant excoriations which did not extend beyond 1 cm. on either side of the nipple. The nipple was almost hidden by an excoriating, exuding mass which was about 24 mm. in diameter. Toward the left axilla there was a slight skin abrasion which resulted from the application of adhesive plaster.

Under the left pectoral muscle there was a nodule which was overhung by smaller masses in the left axilla.

Palpation of the left breast revealed a slightly tender and moderately indurated mass about the left nipple, extending 1.5 cm. to the outside of the nipple. Under firm pressure a clear, thin serum exuded from the excoriation. The mass beneath the pectoral muscle was firm, not tender, freely movable, and measured 1½ by 1 by 1 inches. The nodules in the left axilla were discrete, small, freely movable, not tender and varied from one-half to 1 inch in diameter. They were not as firm as the subpectoral mass.

Examination of the right breast was essentially negative.

The blood Wassermann reactions were negative. Urinalysis showed a cloudy urine with a trace of albumin and a few pus cells.

Roentgen examination revealed a generalized bronchitis and slight evidence of emphysema, but no evidence of metastases.

A diagnosis of Paget's disease was made and a radical amputation for carcinoma of the left breast was performed, May 9, 1923.

A dark field examination of the tissue of the breast was negative for spirochetes, but examination of the axillary glands showed actively motile spirochetes which had all the morphologic appearances of Spirochaeta pallida.

Five days subsequent to the operation there developed a reddish, papular rash over the chest, back and shoulders with a tendency of the rash to become confluent over the back. The patient was given, in the course of his stay at the hospital, four intravenous injections of neoarsphenamine, daily inunctions of mercury and 10 grains (0.65 Gm.) of potassium iodide three times a day, increasing 1 grain (0.06 Gm.) daily. Under this treatment the rash disappeared.

Postoperatively, the wound became infected and was treated alternately with dichloramine and surgical solution of chlorinated soda. Culture from the wound produced colonies of Staphylococcus albus.

Following the operation, three different Wassermann reactions were negative. Urinalysis still revealed the presence of albumin and a few pus cells.

The patient was discharged, June 6, 1923, with a slight infection of the upper wound. He was advised to return to the dispensary for antisyphilitic treatment.

The gross specimen consisted of the left breast, with a zone of skin around the nipple measuring about 2 cm. from the nipple to the skin margins. It included the pectoral muscle and fascia together with the axillary glands, their fascia, and fat (fig. 2). The nipple and the underlying tissue were reddened and showed evidence of induration, which extended for some distance into the underlying tissues. Section through the nipple showed the skin to be smooth and thin but with evidence of maceration beneath. There was an indurated mass which extended from the epithelium downward, for a distance of about 0.5 or 1 cm. Nothing further could be determined in the gross. Section through the axillary glands, which were from 1 to 1.5 cm. in diameter, showed them to be semitranslucent, with no gross evidence of metastatic growth. The glands were firm.

Microscopic section showed a break in the skin surface, at which point the subcutaneous tissue was infiltrated by cells of acute and chronic inflammation (fig. 3). The surrounding epithelium appeared to be thickened and was seen projecting down into the underlying connective tissue. The basement membrane of the surrounding epithelium was intact. Passing from the ulcerated epidermal layer, where polymorphonuclear leukocytes predominated, to the fibrous subcutaneous layers, was a diffuse infiltration of round, epithelioid and polymorphonuclear cells among which were seen fibers of muscle and connective

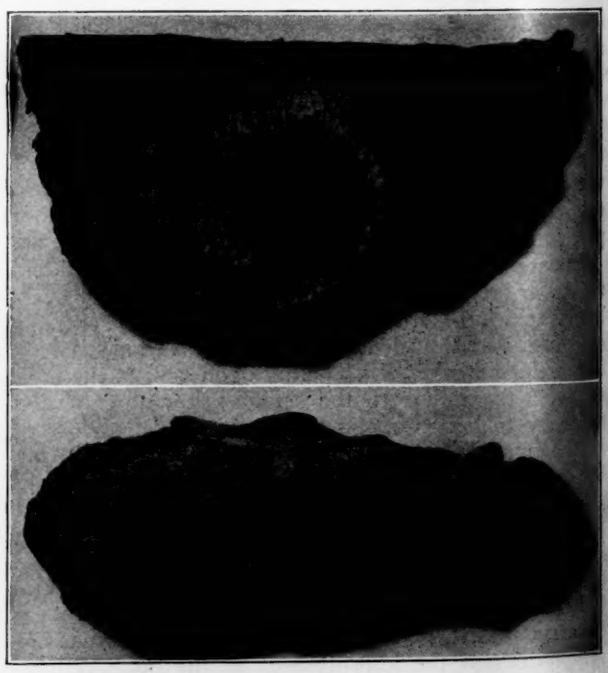

Fig. 2.—The gross specimen, above, showing a reddened, indurated and ulcerated area about the nipple. A cross-section through the nipple, below, showing an indurated mass extending from the epidermis downward.

tissue, with an increase in the fibrous tissue elements. The lymph spaces were filled with round cells which, in some areas, seemed to choke them. There was an increase in the number of blood vessels, which presented a thickened lining of endothelial cells and a surrounding perivascular mantle of round cells consisting of lymphocytes, large mononuclears and plasma cells (fig. 4). There were also a number of epithelioid cells

intermingled with the round cells. There were a few areas which presented this inflammatory tissue in concentric circles with an occasional giant cell. However, these tubercle-like arrangements were not of the type usually seen in tuberculosis. There was no evidence of malignancy, and there were no caseation and no hyalinized areas in this section.

COMMENT

This case is an interesting one not only from the point of view of the unusual location and the rarity of breast lesions in

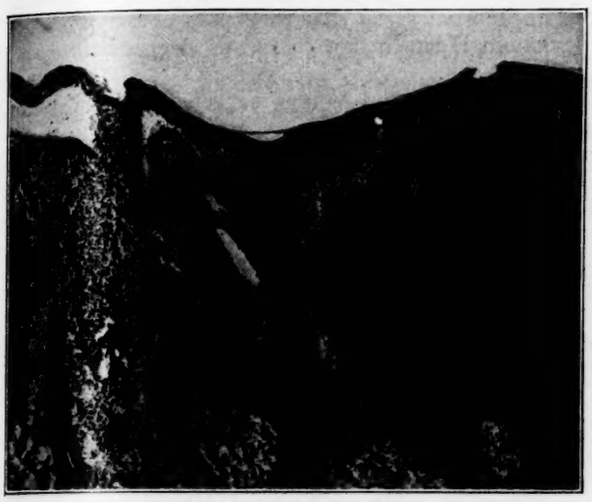

Fig. 3.—Break in the normal epithelium. Evidence of acute and chronic inflammation as well as perivascular infiltration is seen.

the male but also because it presents a definite problem in diagnosis.

Although tuberculosis and mycotic infections were considered, the two most likely preoperative possibilities in this case were syphilis and Paget's cancer of the nipple. The preoperative evidence, in this case, was confusing in spite of the laboratory examinations. The history of a human bite followed by infection and lymphadenopathy, in an alcoholic individual, is sugges-

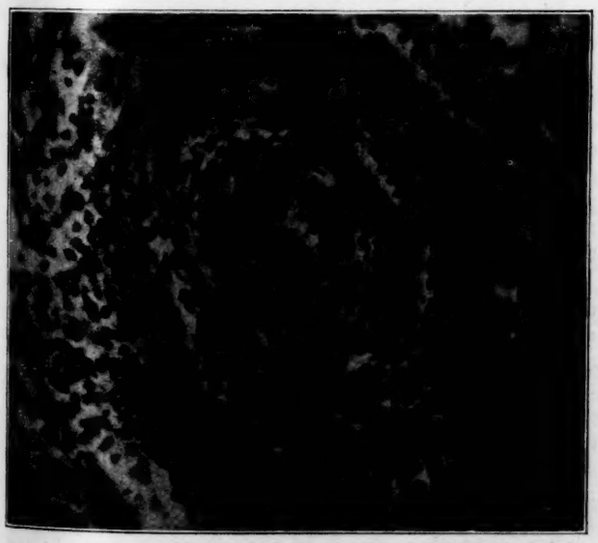

Fig. 4.—Blood vessel with thickened endothelial lining and typical perivascular infiltration of round cells and epithelioid cells.

tive of syphilis, but the negative Wassermann reactions and the absence of spirochetes in the ulcerated breast are against the presence of a syphilitic lesion. The final diagnosis was confirmed by the perivascular round cell infiltration, the presence of Spirochaeta pallida in the left axillary glands and a maculopapular rash which disappeared with the administration of antisyphilitic treatment.

Charity Hospital.

GALVANIC BURNS OF THE ORAL MUCOSA

LESTER HOLLANDER, M.D., PITTSBURGH

In a recent contribution, Everett S. Lain[1] called the attention of American dermatologists to an important and what might appear as a relatively frequent cause of lesions of the oral mucosa.

Three patients have come under my observation recently in whom annoying lesions of the oral mucous membrane disappeared on the removal of amalgam and gold dental fillings and other gold appliances in accordance with the principles outlined by Lain. Each instance can be considered clinically to have been a galvanic burn of the oral mucous membrane.

REPORT OF CASES

CASE 1.—Mrs. A. P., aged 28, was examined, March 10, 1930, on account of multiple, recurrent and exquisitely painful ulcers of the oral mucosa, resembling the clinical picture of aphthous stomatitis. The ulcers first appeared about two years before and usually numbered from fifteen to thirty at various times, being always decidedly worse just before her menstrual periods. A routine examination revealed little of importance.

Mouth smears were negative.

Gastric analysis showed a low content of hydrochloric acid.

The pharynx and the cornea were in a condition of anesthesia, as one at times finds in hysteria.

Testing of sensitivity to foods both by intradermal injections and by the trial method proved nothing.

When the patient was given dilute hydrochloric acid in doses of 30 minims (2 cc.) the lesions of the mucous membrane increased.

Slowly the patient was so much worse that she found it extremely difficult to masticate her food. She was then placed at absolute rest in bed, on a milk diet, for a period of six weeks. There was some improvement, but the ulcers continued to recur.

Shortly after Lain's communication, all the amalgam fillings were removed from her teeth and replaced with temporary (cement) fillings. Within ten days there was a great change and since then there has been no recurrence of the ulcers, though two menstrual periods have passed.

CASE 2.—L. W. O., a man, aged 31, was examined, June 16, 1931, on account of a sore tongue of four months' duration. The sore complained of was a whitish-gray elongated patch about 2.5 cm. long and 1 cm. wide, affecting the under and lateral surface of the right side of the tongue opposite a gold fitting of a so-called hygienic fixed bridge, which occupied the space of an extracted lower right first molar. There were two other similar patches on each side of the buccal mucosa.

The patient complained of a metallic taste.

He smoked about twenty cigarets a day.

Smears of the mouth, and general and serologic examinations, proved nothing.

On account of the appearance of the lesions and the history of a fair amount of smoking I considered the lesions as "smokers' patches," but the discontinuance of the use of tobacco had no effect on the lesions.

Further questioning proved that these lesions began shortly after the "hygienic fixed bridge" was placed in the mouth. Examination also showed a number of amalgam fillings in the teeth.

On removal of the gold bridge, all the lesions disappeared.

In January, 1932, the same gold bridge was replaced and within one week the same lesion of the tongue and on the right buccal mucous membrane and also the metallic taste reappeared. Within a week after the second removal of the gold bridge the lesions and the metallic taste disappeared, and the patient's mouth since then has remained well.

CASE 3.—N. K., a man, aged 41, consulted me, Dec. 15, 1931, on account of painful and recurring ulcers of the mouth, which clinically resembled those of aphthous stomatitis. This condition had been recurring for a period of eighteen months. There were eight lesions in the patient's mouth, each one oblong and sharply defined, with an inflammatory halo around

1. Lain, E. S.: Chemical and Electrolytic Lesions of the Mouth Caused by Artificial Dentures, Arch. Dermat. & Syph. **25**: 21-31 (Jan.) 1932.

a necrotic center, which was covered by a yellowish pyogenic membrane. He did not complain of a metallic taste. He had many amalgam fillings in his teeth and also a gold crown over the lower left incisor tooth. After the removal of this crown, the ulcers disappeared and have not recurred since.

COMMENT

Each instance seems to point to the fact that the principle of Lain is correct and that two dissimilar metals suspended in normal saliva, which is a fair electrolyte (Hodgen, quoted by Lain) complete a galvanic battery.

SUMMARY

One case of so-called smokers' patches (leukoplakia) and two cases of aphthous stomatitis-like ulcers of long standing were cured when the metals producing the galvanic burns of the oral mucosa were removed, after all sorts of other therapy failed.

631 Jenkins Building.

Special Article

THE CLINICAL SIGNIFICANCE OF VITAMIN D IN INFANCY AND CHILDHOOD

FREDERIC W. SCHLUTZ, M.D.
CHICAGO

[EDITORIAL NOTE.—The following article is one of a series on the Present Status of the Knowledge of Vitamins, prepared under the auspices of a committee composed of Morris Fishbein, chairman, Lafayette B. Mendel and Julius Hess, representing a joint committee of the Council on Pharmacy and Chemistry and the Committee on Foods. These articles have been considered by the Council on Pharmacy and Chemistry and by the Committee on Foods and are published under their auspices. The opinions expressed are those of the authors and not necessarily the opinions of the Council on Pharmacy and Chemistry or the Committee on Foods.]

The importance of vitamin D as an indispensable accessory food factor in proper growth and nutrition has been established beyond doubt by the most extensive scientific and clinical investigation. Beginning with the work of Mellanby in England, who first demonstrated that the experimental rickets of animals was controllable by the giving of cod liver oil or butter fat, there has been a steady accumulation of scientific facts and clinical data regarding this vitamin.

To McCollum and his co-workers belongs the credit of having first differentiated vitamin D from other accessory food factors and of having definitely established its identity. They also found that cod liver oil contained this factor in the highest degree and was practically a specific if high vitamin D effect was desired. This scientifically confirmed the experience of Nordic seafaring peoples that the oil of the liver of the cod was a potent remedy for many bodily ailments of that time.

The exceptionally able investigations of McCollum, Sherman, Hess and many others then showed beyond a doubt that vitamin D was not alone a specific in the cure and prevention of rickets but also a potent factor in the metabolism of the elements calcium and phosphorus in the animal body.

In 1919, Huldschinsky of Berlin made the interesting discovery that he could improve and cure rickets by the use of the ultraviolet radiation from a quartz mercury vapor lamp. This was in confirmation of clinical experience first mentioned by Palm in 1890, who observed and reported the specific curative effect of sunlight on rickets and, again, was a scientific explanation of the experience mentioned in the earliest Greek and Roman medical writings that sunlight and mountain or sea air in connection with it were most beneficial in certain constitutional and deforming diseases.

A series of exceptionally fine researches by European and, notably, the American investigators McCollum, Park, Hess, Steenbock and Blunt definitely showed that the ultraviolet portion of the solar spectrum produces all the effects of vitamin D in the animal organism and that it not only does this directly but, through irradiation and photochemical activity, can activate certain substances so that they possess the properties of vitamin D which they had in no degree before such irradiation.

These strange and baffling facts were clarified considerably and explained with the discovery that the potent part of a substance active in vitamin D was contained in a nonsaponifiable fat fraction which it contained and which could be activated or made vitamin D containing or potent by solar or ultraviolet irradiation. It is a sterol in these substances that takes on this potency. The proof that by photochemical activity vitamin D can be formed from ergosterol is one of the most brilliant recent discoveries of biochemistry. Ergosterol is widely distributed in nature and is found in great abundance in the skin of the living animal organism. The formation of vitamin D from the ergosterol in the skin of man and animal undoubtedly explains the antirachitic and other beneficial action of solar or artificial ultraviolet ray. All experimental evidence so far at hand points to the specific influence of vitamin D on the calcium and phosphorus metabolism of the animal organism.

The importance of the properly balanced relationship of these two sovereign elements in the living organism are well understood. If they are disturbed or abnormal or if either one or both of the elements is inadequately present, more or less serious functional as well as structural disturbances occur in the organism. In some as yet unexplained manner, vitamin D exerts a regulatory function over these elements and tends to correct abnormal relationships and change unfavorable negative balances to the positive or favorable side. In rickets, the disease that has furnished practically all the scientific data which have led up to the remarkable discoveries of the properties of vitamin D, appear these peculiar disturbed relationships between the calcium and phosphorus metabolism. They occur in all forms of rickets whether spontaneous or artificially produced in the human or animal organism.

All experimental evidence seems to show that for the development of rickets two dietary defects are apparently required. There is conceivably either a low or an unbalanced intake of calcium and phosphorus, and there must be a lack of the unidentified organic substance which is now designated as vitamin D. There are carried in the blood plasma, calcium, phosphate and carbonate, the principal inorganic constituents of bone. According to a theory advanced by Howland and Kramer, these substances diffuse into the interstitial spaces when they arrive in the osteoid tissue. If for any cause the carbon dioxide tension falls below normal, there is an increase in alkalinity, a condition that favors the precipitation of calcium salts.

In rickets, the adequate precipitation of calcium salts fails to take place. L. E. Holt, Jr., believes that precipitation of calcium salts continues even during severe rickets, but because of the inorganic phosphorus deficiency in the blood serum proceeds at a much slower pace than in the normal child, or in healing rickets.

There is in the rachitic subject generally less than enough calcium or phosphate present in the blood plasma. These are the materials from which bone salts are constructed. There is also presumed to be less than the requisite concentration of these substances in the interstitial fluid of the osteoid tissue. In such a case precipitation of the calcium salts would not occur.

There is generally very little lowering of the blood calcium in ordinary rickets. The phosphate ion, however, the other important element in the formation of triple calcium phosphate, is always low. Experimental rickets can be consistently produced in the rat or in other animals by the effect of this combination in the absence of vitamin D. A low phosphorus diet with a high calcium intake tends to block completely the absorption of phosphorus by the formation of the sparingly soluble triple calcium phosphate in the intestinal tract. Without changing the diets in any way, the addition of vitamin D in the form of cod liver oil will in a remarkably short time accurately restore the normal values for plasma calcium and phosphorus.

Practically the same effect as that produced by cod liver oil can be produced by sunlight. From the work of Hess, Steenbock and others it is now known that the vitamin D effect of sunshine is doubtless the result of solar photochemical activation. These authors have demonstrated that various other oils, ordinarily therapeutically inert, can be activated and rendered rickets curative by solar or ultraviolet irradiation.

Studies in experimental rickets and of the human form have demonstrated clearly that a lack of a certain unidentified accessory food factor or a lack of sufficient sunshine is the chief causative factor in the production of rickets. How these two agencies, if adequately supplied, bring about a proper correct concentration of calcium and phosphorus in the fluids of the animal organism lies at present still beyond our knowledge. We are only confronted with the indubitable proof that the presence of the one or the other and preferably a combination of the two will with absolute certainty prevent and cure the disease rickets, one of the most prevalent diseases of childhood and one which indirectly has been responsible for part of the high infant mortality.

The activating and regulating effect of vitamin D on mineral metabolism is not limited to the disease rickets. Many disorders in which is involved a faulty balance of the elements calcium and phosphorus, or in which these elements are not properly utilized, fall within the therapeutic sphere of vitamin D. In infantile and juvenile tetany a disbalance between these elements definitely exists. This disorder, so commonly associated with rickets, is generally present in manifest or latent form if the blood calcium sinks to very low levels. The blood phosphorus may not be changed much from the normal. It is a disorder that is almost in complete abeyance during seasonal periods when maximum amounts of solar ultraviolet are available. The curve of its prevalence reaches its peak during the dark winter months, when this is not the case. Dietary errors that tend to inadequate intake of the mineral calcium or to faulty absorption or utilization may be contributing factors. The most strikingly beneficial remedy in the relief of the disorder is vitamin D in the form of cod liver oil combined with solar or artificial ultraviolet irradiation. Such obscure disorders as osteogenesis imperfecta or osteopsathyrosis and celiac disease are at times distinctly benefited by the liberal use of vitamin D in the therapeutic procedures attempted for these difficult disorders. It is true that the effect is not so striking as in rickets or in tetany, for the reason that the pathology of these disorders is still very obscure and their true etiology shrouded in much mystery.

The liberal use of cod liver oil is indicated in most acute and chronic disorders in which there is excessive loss of calcium or phosphorus and severe degrees of malnutrition. A large mass of clinical data and experience, supported by much good critical scientific investigation, attest the therapeutic value of vitamin D in such disorders. For the rapidly growing young organism, it is an absolutely essential factor in the diet if proper and adequate growth and development are to take place. At no time in the child's life is the demand for the essential elements and, above all, for calcium and phosphorus, so great as in infancy and early childhood. At no time is the proper and orderly balance of these elements more easily disturbed and pathologically altered. It is for this reason that rickets in varying degrees is so widespread a disorder in this period of life and why the adequate introduction of the vitamin D factor is quite indispensable, not only as an optimal growth producing factor but as a rickets preventive or curative factor as well.

The favorable effect of vitamin D on tooth structure and its action in some measure as a preventive of dental caries is definitely proved by the research of May Mellanby, P. R. Howe, Boyd and Drain, and others. It has been found that practically all types of antirachitic treatment, including cod liver oil and ultraviolet radiation, have a favorable effect on the teeth. Not only was the tooth structure improved and the calcium content of it increased but the tendency to caries modified as well.

All sources of vitamin D, whether natural in the foods, such as in cod liver oil or egg yolk, or artificial, such as in irradiated food products or irradiated sterols, were in a high degree effective. These effects are particularly striking during the period of active growth.

There is a definite and direct relationship between the original structure of the tooth and its liability to decay. In an extensive study of children's teeth, May Mellanby found sound tooth structure in only about 14 per cent of the cases. Like the original structure of the tooth, the secondary dentin depends on the quality of the diet. If the amount of vitamin D in the diet is adequate, the secondary dentin will be well calcified. If it is lacking or grossly inadequate, the secondary dentin will be of poor quality or will be absent altogether. The studies of Mrs. Mellanby showed further that increased quantities of vitamin D, whether in the form of butter, eggs and cod liver oil, or as irradiated ergosterol, have a definitely beneficial effect in the prevention of caries in the teeth. Similar observations were made by Boyd and Drain. All experimental evidence seemed to point to the fact that the presence of vitamin D in the diet is not only essential for the original development of the tooth but also an important factor in building up the resistance of the tooth and preventing caries or checking its spread.

CALCIUM AND PHOSPHORUS METABOLISM

There are three periods in the life of the organism when the elements calcium and phosphorus are particularly needed: during the growth period of the young organism when these elements are stored in its own body; during the period of pregnancy when the necessary amounts must be reserved for the fetus, and during lactation when a substantial amount must be furnished through lactation to the organism just born

and during the early part of infancy, when its chief source of nutrition is generally the mother's milk.

The fetus has definite requirements for calcium and phosphorus. They are relatively less large than those required by the growing organism after birth and are derived entirely from the maternal organism. The question arises whether the mother can furnish them all from her food intake alone or whether she must draw on some of her own tissue reserves, such as bones or teeth, to supply adequately any deficient amount. The same question arises during the period of lactation if the infant receives only breast milk.

With recent knowledge of the action of light and its faculty to make available vitamin D through irradiation and photochemical activation, the possibility of favorably affecting calcium and phosphorus balances in the pregnant and lactating female through this procedure, in addition to the use of high vitamin D containing foods and substances, has been thought of. In the human fetus the elements are stored from about the fourth month on. The storage, which begins slowly at first, becomes more rapid toward the end of pregnancy. About two thirds of the total amount stored at birth is stored during the last two months of pregnancy. The amount of calcium and phosphorus stored by the mother during gestation varies considerably. Sometimes it is well above the supposed fetal demand. Again, it may be considerably below. This is especially true of calcium. In such cases the mother is either taking the elements from her own tissues or the fetus is getting an insufficient supply.

The same situation seems to prevail for the lactating mother. Some mothers actually store calcium and phosphorus during lactation; others lose it, especially when the milk production is at its height. Restorage begins, however, when the production falls to lower levels. Experimental evidence has shown, however, that such losses practically do not occur when an adequate amount of vitamin D is provided in the form of cod liver oil if adequate amounts of the minerals are offered in the dietary. The experiments on the human being are paralleled closely by the clear-cut positive finding in the animal, such as the goat, the cow and the rat.

Vitamin D furnished in the form of solar or artificial ultraviolet irradiation of the woman will influence her milk—apparently much more than the taking of cod liver oil. The infant, however, does not benefit by such indirect treatment to the extent that he does by direct irradiation and by receiving cod liver oil himself. Every experimental and clinical evidence points to the importance of vitamin D in the form of solar irradiation or cod liver oil or both, in addition to adequate calcium and phosphorus containing diets for both the maternal organism and the offspring if normal growth and development on the part of the latter is to be looked for and unusual drain on the former is to be avoided. The impression prevails in some quarters that if enough vitamin D is given and an adequate amount of light is provided, the quantity and proportion of calcium and phosphorus become relatively unimportant. It has been definitely shown that increasing the quantity of calcium and phosphorus in the diet will increase the storage of these elements by both infants and older children. The taking of cod liver oil in addition or the ingestion of irradiated foods will, however, increase the retention markedly in the infant and probably also in the older child.

A good ratio of the two elements in the diet is essential. The ratio of 2:1 or 1:1 of calcium to phosphorus has been suggested and seems to be ideal and, if present in a neutral medium, will give the best retention of the two elements in both the human and the animal organism.

The kind of food that makes up the child's dietary has considerable influence on the calcium and phosphorus metabolism. Foods and food mixtures vary considerably in the degree and readiness with which they give up calcium and phosphorus to the body. This can largely be overcome by irradiation with ultraviolet rays or by the addition of supplements containing an adequate amount of vitamin D. Some of the sugars, such as lactose, elevate calcium retention if taken in large amounts.

Orange juice causes an exceptionally high storage of calcium and phosphorus. Sherman and Hawley have shown that the storage of calcium from vegetables is rather low and inadequate for the juvenile organism but is good for the adult.

DISTRIBUTION OF VITAMIN D

According to present-day information and present knowledge, the distribution of vitamin D in nature is rather limited. Certain food and medicinal substances in common use contain it in considerable amount. All scientific investigators agree that cod liver oil contains it in a high degree in the natural state. Bills of the Mead Johnson research laboratories is of the opinion that the cod can synthesize vitamin D. The evidence is not so clear that the fish elaborate the vitamin through the influence of ultraviolet irradiation. Bills has also developed a clear-cut method of measuring the potency of any given cod liver oil in units of vitamin D. Largely on the basis of the method of the Wisconsin Alumni Research Foundation, the Council on Pharmacy and Chemistry of the American Medical Association has designated as a "rat unit of vitamin D, that amount of vitamin D, which when uniformly distributed into the standard vitamin D deficient diet-ration 2965 (*J. Biol. Chem.* **64**: 263 [June] 1925)—will produce a narrow and continuous line of calcium deposits in the metaphyses of the distal ends of the radii and ulnae of standard rachitic rats." The line test and McCollum's rachitogenic diet are henceforth the acceptable procedures by which a rat unit of vitamin D is to be determined.

The liver oil and body oil of certain other species of fish are also highly active. This is true of the halibut, puffer fish, the goosefish, the shark, the haddock, the herring, the sardine, the salmon and the burbot. The liver oil of the puffer fish and the burbot, for example, is eight times as potent as cod liver oil. Few of these oils, aside from cod liver oil, are used for their vitamin D content. It is quite possible that their importance and value in this regard are not fully appreciated and that what is really an excellent source of vitamin D is entirely overlooked or not properly made use of.

The second most potent source of vitamin D, after these fish oils, is egg yolk. Mellanby, A. F. Hess, Kramer and Casparis first showed that egg yolk, if added to rickets producing diets, will both prevent and cure rickets in the experimental animal; he also demonstrated the same activity for the human subject. Other investigators have confirmed his observations but have the impression that egg yolk is more certain to prevent rickets than to cure it. The potency of egg yolk varies and is largely dependent on the diet of the hen and the amount of solar or artificial ultraviolet irradiation it receives. Hart and Steenbock, for example, were able

to increase the antirachitic potency of eggs tenfold by irradiation of the hens. Cod liver oil fed to the hens will have a somewhat similar effect.

Butter fat contains relatively little of the antirachitic factor D. According to Coward, it ranges from 0.8 to 1.0 unit of vitamin D, as compared with 50 to 150 units for cod liver oil. The quantity of vitamin D in cow's milk and butter varies to some extent with the cows, as Hess has shown recently that it can be influenced definitely by feeding irradiated yeast to the cows. Some investigators have found this to be particularly true for the goat.

The studies of Hess and Weinstock and of Outhouse and Macy showed practically no vitamin D content in human milk. Studies of Weech and Hess and Weinstock have shown that the administration of cod liver oil or irradiation of the mother with sources of ultraviolet rays can confer some vitamin D activity on human milk although by no means the amount that can be conveyed to the infant by using these agents directly.

Practically all vegetables, whether in the fresh green state or dried, have no vitamin D content and have practically no antirachitic potency. This seems strange in view of the fact that vegetables are grown in abundant sunshine and that they can nearly all be activated if irradiated artificially with ultraviolet rays. The explanation may lie in the fact that the amount of ultraviolet radiation in sunshine that reaches the earth is relatively small and that the plant kingdom is rather poorly provided with any system for the translocation of lipoids.

Vegetable fats are not antirachitic in their natural state. Coconut oil is an exception. If sun dried, it may have a very slight content of vitamin D. Many of the vegetable oils become highly potent under ultraviolet irradiation.

ACTIVATION BY IRRADIATION

The discovery that certain parts of the solar spectrum have the photodynamic action of activating certain organic substances in the plant and animal kingdom and of giving them vitamin D characteristics is one of the great biologic discoveries of the age. This discovery raised the question as to the chemical composition of vitamin D. As yet this is not known, but a good deal of information about it is at hand. The activity centers about the unsaponifiable fraction of oils or other foods, which in fats and oils consists largely of cholesterol and in plants of phytosterol. Cholesterol occurs in the brain, skin and blood and in very small amounts in every cell of the body. A third sterol, ergosterol, very similar in composition to cholesterol, is now known to be quite as widely distributed in the animal and plant organism as cholesterol and phytosterol. It is particularly abundant in yeast and ergot and is the most widely distributed of all sterols. While ordinary cholesterol can be activated by irradiation, it has been found that ergosterol possesses the remarkable property of acquiring antirachitic potency on irradiation to an extent 2,000 times as great as cholesterol and that it was the contaminant of ordinary cholesterol and in this way brought about activation of ordinary cholesterol on irradiation.

The extraordinary activity of irradiated ergosterol has been demonstrated on both the young animal and the human young. Its beneficial effects on blood calcium and phosphorus levels, on the retention of calcium and phosphorus and on the calcification of bones are immediate and striking. It is the chief source of vitamin D made available in nature through photodynamic activity of the solar spectrum.

DOSAGE

It is quite probable that the extent to which any food can be irradiated depends at least in large part on the amount of ergosterol it contains. There is a great deal of evidence indeed to support the theory that ergosterol is the parent substance of vitamin D. The remarkable power of irradiated ergosterol to cure rats with rickets was found equally effective in the cure of rachitic children. Extensive clinical experience has shown that it has a remarkably reliable and rapid action. By many it is regarded as the therapeutic agent of choice for rickets and tetany. Because of its tremendous potency, the dose needed is very small, usually about 0.05 mg. daily (if the sterol has been skilfully activated). Its effectiveness in such small dosage obviously gives it a great advantage over cod liver oil, which must be given in a much larger amount to get a comparable effect. Another advantage of treatment with irradiated ergosterol is the speed with which favorable results are obtained. In the cases of advanced rickets these may even be dramatic. Advanced craniotabes may clear up in two weeks under its use. Extensive calcification of the ends of long bones has been observed in an equally short time. Normal phosphorus levels were often observed as early as one week or ten days after treatment. No other form of treatment of rickets will give so rapid a result. Similar good results have been observed in cases of tetany.

In comparing the effect on the calcium balance in tetany of cod liver oil, ultraviolet radiation and ergosterol, Bakwin found that with cod liver oil it took an average of sixteen days before the blood calcium returned to normal levels and fourteen days with ultraviolet rays but only seven days with ergosterol. The most extensive clinical experience with this agent now has shown that it is absolutely reliable in the prevention as well as the cure of rickets if adequate amounts are given. The cure is more rapid than with other agents, such as cod liver oil, its concentrates or with direct irradiation. It may not always protect the rapidly growing premature infant if given alone, but in combination with other antirachitic agents it is quite superior to any other agent used.

Excessive dosage of irradiated ergosterol may have a harmful effect. In the experimental animal these effects may be fatal. They are not likely to be observed in the human being, as the dosage fatal to the experimental animal is at least 10,000 and possibly 40,000 times as large as the amount required to prevent or cure rickets. The principal toxic effect is expressed in the blood calcium and blood phosphorus. This may be increased by 25 or 50 per cent of the normal. The toxic effects of excessive doses of vitamin D appear to be in direct proportion to the size of the dose. If the excessive dose of irradiated ergosterol is discontinued, the animal will rapidly recover from the toxic effects. Its appetite will return, normal growth will be resumed, and the excessive deposit of calcium will cease.

Excessive dosage of vitamin D in the form of irradiated ergosterol will cause hypercalcemia. This is more likely to occur if the preparation is used for prophylactic purposes rather than for the curative treatment of a case of active rickets or tetany.

Great variation has existed in the potency of various irradiated ergosterol preparations. The potencies of five European preparations determined in the research laboratories of Mead Johnson & Co. ranged from 14

to 800 and even 2,500 times the potency of cod liver oil. The standard adopted by the Wisconsin Alumni Foundation is the one now generally accepted in the United States and postulates a potency for irradiated ergosterol preparations of 250 D, by which is meant a preparation 100 times as potent as a good cod liver oil or 250 times the Wisconsin standard. Two drops of it are equivalent in vitamin D potency to a teaspoonful of cod liver oil.

The Council on Pharmacy and Chemistry has accepted irradiated ergosterol prepared as prescribed by the Wisconsin Alumni Foundation Standard, under the name of "viosterol." The term "viosterol" signifies that the irradiated ergosterol was dissolved in oil. The daily prophylactic dose for an average infant or child of this viosterol preparation in oil is approximately 10 drops. For the premature and rapidly growing infant it may be much higher. The daily curative dose is from 20 to 30 drops and in severe cases may be considerably in excess of such an amount.

DESIRABILITY OF CAUTION

This very important vitamin is available, then, to man in various ways and its rather limited distribution in a natural state is counterbalanced by the ingenuity of the research laboratory in liberating it and making it available in practically unlimited amount from sources totally unsuspected or unthought of only a few years ago. A nation-wide propaganda emphasizing the importance of vitamin D in the proper growth and development of the animal organism and calling attention to the sources from which it can be made available has seized on the popular imagination to an almost unbelievable degree. There are comparatively few infants or children now who are not receiving cod liver oil in some form or are extensively exposed to solar or other forms of radiation.

One cannot escape the feeling that a somewhat similar criticism is warranted with regard to the use of light as a source of vitamin D. In an excess of zeal the public has seized on all forms of radiation with an enthusiasm that has reached almost alarming proportions. There is considerable evidence, both in the experimental animal and in the human subject, that light can be harmful if used to excess. All clinical evidence seems to show that excessive use of light in any form can have effects quite the reverse from those anticipated or desired. A return to a more moderate use of this potent agent and remarkable source of vitamin D would seem to be reasonably indicated, at least until its potency can be more accurately measured than is now possible.

Vitamin D is one of the indispensable essentials of the growing animal organism. This knowledge and its widespread use has already resulted in much good. The incidence of rickets, formerly so large, has been diminished to a remarkable degree and with it the complicating features which directly or indirectly were so large a result of this disorder and contributed in large measure to infant morbidity and mortality. Much is known about this important vitamin. There is much that is still mysterious and unknown. This is particularly true of the photodynamic activity of the solar spectrum. There is every reason to believe that the unfolding of these secrets will reveal additional potencies of vitamin D and will reveal what is now not known about its structure and the mechanism of its production and activity.

920 East Fifty-Ninth Street.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

H. A. CARTER, Secretary.

BURDICK SUPER-STANDARD AIR-COOLED LAMP ACCEPTABLE

The Super-Standard Air-Cooled Lamp is the trade name for an ultraviolet radiation lamp manufactured by the Burdick Corporation, Milton, Wis. The ultraviolet radiation generator (the burner) used in the lamp was developed by the Cooper-Hewitt Laboratories and consists of a quartz tube containing mercury in a vacuum. The mercury lies in a well at the cathode end of the burner. The other, or anode, end is fitted with a tungsten target. The metal lead-in wires are sealed in the fused quartz through intermediate steps of glass with decreasing coefficients of expansion. This forms a vacuum seal with a capacity for withstanding extremely high temperatures.

Burdick Super-Standard Air-Cooled Lamp.

A specially designed chromium reflector confines the rays over an area the size of an ordinary treatment cot 7½ feet long by 22 inches wide. The burner, reflector and ventilating hood are mounted on a counterbalanced upright erected on a triangular frame. Resting on rubber tired rollers, the unit may be moved easily from place to place. The upright is adjustable from a height of 45 to 75 inches. The cross-arm supporting the hood burner has a 15 inch extension. This extension arm is supported by a carriage and, together with the casing, they form a ball-bearing swivel unit which may be rotated on any horizontal plane without producing a tension on the steel-wire cable. There is a small steel tape measure with spring return mounted on the end of the casing. The physician can read the distance between the burner and the patient readily. The shipping weight is approximately 150 pounds.

The Super-Standard Air-Cooled Lamp may be wired to operate on either a direct or an alternating current with no change in outward appearances. The physician must indicate the type of current (e. g., A. C. or D. C.) available in his office when ordering the unit.

The emission characteristics will be published at a later date. The company claims that at a distance of 30 inches from the burner to the patient the lamp emits a maximum amount of ultraviolet radiation sufficient to produce a first degree erythema (mild reddening) on the average person after an exposure of thirty seconds.

ELECTRICAL OPERATING CHARACTERISTICS

Alternating Current	*Direct Current*
Line voltage.....105 to 120 volts (60 or 25 cycle)	Line voltage.....120 volts
Starting amperage.....12 amperes	Starting amperage.....10 amperes
Operating amperage...7.5 amperes	Operating amperage...4.5 amperes
Maximum burner voltage...165 to 175 volts	Maximum burner voltage....75 to 80 volts
Minimum burner voltage..75 volts	Minimum burner voltage..35 volts

NOTE.—Direct current, 220 volts; operating amperage, 3.5 amperes. Maximum burner voltage, 170 volts.

The Burdick Corporation claims that the Super-Standard Air-Cooled Lamp will produce ample ultraviolet radiation to protect against and cure rickets in children. The firm claims that the lamp is an efficient generator of ultraviolet radiation to supply the wants of a physician practicing ultraviolet radiation therapy in accordance with the technic adopted by the Council.

The Council on Physical Therapy declares the Super-Standard Air-Cooled Lamp eligible for inclusion in its list of accepted devices for one year.

SUPER ALPINE SUN LAMP ACCEPTABLE

The Super Alpine Sun Lamp (Physician's and Hospital Unit) is a trade name for an ultraviolet radiation lamp, manufactured by the Hanovia Chemical & Manufacturing Company, Newark, N. J. The ultraviolet ray generator is a high-pressure low-voltage mercury arc enclosed in transparent fused quartz, suitably mounted, air-cooled, and designed, according to the firm, for continuous performance in therapeutic general irradiation.

The burner consists of an evacuated tubular vessel, constructed entirely of transparent fused quartz. Aluminum radiating fins maintain the mercury pools at an efficient operating temperature. Radiant energy is generated by means of an electric discharge through mercury vapor between sealed-in tungsten electrodes. The light energy emitted consists in part of ultraviolet, visible and infra-red radiations.

ELECTRICAL OPERATING CHARACTERISTICS

Alternating Current	*Direct Current*
Line voltage.....105-120 volts (60 or 25 cycle)	Line voltage.....120 volts
Starting amperage.....12 amperes	Starting amperage.....10 amperes
Operating amperage...7.5 amperes	Operating amperage...4.5 amperes
Maximum burner voltage....165 to 175 volts	Maximum burner voltage....75 to 80 volts
Minimum burner voltage..75 volts	Minimum burner voltage..35 volts

NOTE.—Direct current, 220 volts, operating amperage 3.5 amperes. Maximum burner voltage, 170 volts.

The burner is mounted rigidly on a hood frame which may be adjusted to suit the convenience of the operator. The hood serves as an outer shell for the polished chromium reflector of special design. Between the copper hood and the polished chromium reflector is a ventilation passage designed to assist materially in cooling the burner and to maintain a comfortable hood temperature. The hood is equipped with two hinged doors for intercepting light or to control within limits the area being irradiated.

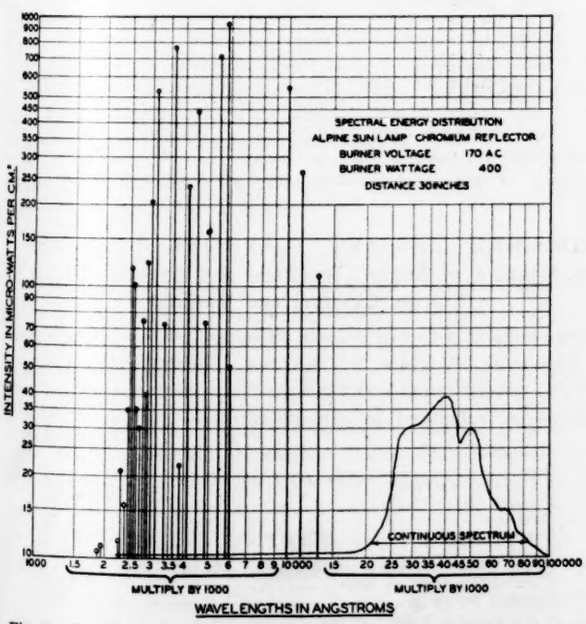

Fig. 1.—Radiation characteristics of Super Alpine Sun Lamp; observation taken directly under the burner.

The manufacturer claims that rotation of the reflector about the burner is a unique feature permitting the employment of the lamp for group irradiation. On one side of the hood there is fastened a steel tape measure which may be conveniently employed to measure the distance between the patient and the burner.

The lamp hood is supported on the upright by means of a main swing head and cross arm, and counterbalanced by a counterweight on the inside of the upright. This is a vertical travel from a minimum position in which the burner is 40 inches from the floor to a maximum height of 70 inches from the floor. The cross arm has a 12 inch travel, and at its maximum extension the burner is 24 inches from the upright. The upright is mounted on the side of the tripod base, so that it may be brought close to the side of the treatment table or bed. The upright is 75 inches in length, with an outside diameter of 1½ inches.

The hospital-type carrier is rigidly bolted to the base. This, in turn, is fitted with three rubber-tired, ball-bearing, 5 inch casters, two of which are straight-stem and fixed; the one in front is swiveled. The clearance under the base is sufficient for movement over a 1½ inch door sill. Thus, the unit can be moved about easily, especially adapting the lamp to ward work and application to bedridden patients. The approximate shipping weight of the entire unit is 150 pounds.

The electrical controls are housed in a ventilated steel casing. This casing is equipped with a three-position, 20 ampere, 125-volt snap switch. A voltmeter and roller-contact adjustable rheostat are available for voltage adjustment. The top of the casing is 20 inches from the floor.

The Super Alpine operates on either alternating or direct current. The purchaser must state the kind of current supply before ordering. A transformer is provided for alternating current and a rheostat for direct current.

Fig. 2.—Super Alpine Sun Lamp.

The company claims that the design of the burner and the reflector in combination results in the projection of the light energy in such a manner that a patient is irradiated simultaneously on the surfaces directly before the lamp and on the lateral surfaces. On a plane surface, at 30 inches distance, the light energy distribution over an area of 5 by 2 feet is relatively uniform.

The emission characteristics are shown in figure 1. The firm claims that, at a distance of 30 inches from the burner to the patient, the lamp emits a maximum ultraviolet energy sufficient to produce a first degree erythema (mild reddening) on the average person after an exposure of thirty seconds.

The Hanovia Chemical & Manufacturing Company claims that the Alpine Sun Lamp will produce ample ultraviolet radiation to protect against and to cure rickets in children, and that the lamp is a suitable generator of ultraviolet radiation to supply the wants of a physician practicing ultraviolet radiation therapy in accordance with the technic adopted by the Council.

The Council on Physical Therapy declares the Alpine Sun Lamp eligible for inclusion in its list of accepted devices for one year.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

ANTIRABIC VACCINE (See New and Nonofficial Remedies, 1932, p. 369).

United States Standard Products Company, Woodworth, Wis.

Rabies Vaccine-U. S. S. P. (Semple Method) (See New and Nonofficial Remedies, 1932, p. 373).—Also marketed in packages of seven vials, each containing one dose; and in packages of twenty-one syringes, each containing one dose.

TUBERCULIN-KOCH (See New and Nonofficial Remedies, 1932, p. 376).

The Gilliland Laboratories, Marietta, Pa.

Intracutaneous Tuberculin for the Mantoux Test.—Marketed in packages of one 1 cc. vial containing diluted tuberculin sufficient for ten tests. Each dose of 0.1 cc. represents 0.0001 Gm. of tuberculin.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

NESTLÉS FOOD

(Malted whole wheat, malt, dry milk, sucrose, wheat flour, salt, dicalcium and tricalcium phosphate, iron citrate and cod liver oil extract. Contains vitamins A, B and D.)

Manufacturer.—Nestlé's Milk Products, Inc., New York.

Manufacture.—An infusion of whole wheat flour and malt flour is malted at a temperature to secure a minimum of maltose and a maximum of dextrins. The liquid containing the soluble materials is concentrated in "vacuum kneaders" (52 C.) to a dough. During the final steps of the concentration, definite quantities of high starch wheat flour, salt and dicalcium and tricalcium phosphates are worked into the dough. The dough is rolled into thin slabs, which are baked at a relatively low temperature to protect the vitamins from destruction as far as possible. The resultant crisp biscuit is powdered and admixed with condensed sweetened milk, calcium phosphate (0.1 per cent of the weight of the final product), iron citrate (0.01 per cent of the weight of the final product) and cod liver oil extract (380 Gm. per thousand kilograms of the dried food). The extract has a vitamin D potency of forty times that of good grade cod liver oil; the addition is equivalent to 1.5 per cent of cod liver oil in the dried food. The mixture is homogenized, "vacuum" (2 inch pressure) dried on drums at 52 C., powdered and packed in hermetically sealed tins in an atmosphere of nitrogen or carbon dioxide.

About 33 per cent is whole milk solids.

Analysis (submitted by manufacturer; in part calculated from the analysis of the component ingredients).—

	per cent
Moisture	2.0
Ash	2.8
Total Fat	9.8
(Milk fat 9.0% Cereal fat 0.8%)	
Protein (N × 6.25)	15.0
Sucrose	22.0
Lactose	13.0
Dextrins and maltose	21.5
Starch	13.0
Crude fiber	0.9
Total carbohydrates other than cereal fiber (by difference)	69.5
Iron (Fe)	0.0035
Calcium (Ca)	0.45
Phosphorus (P)	0.35

Calories.—4.3 per gram; 122 per ounce.

Vitamins.—Nine ounces approximate in vitamin D the D content of one teaspoonful (4 cc.) of average cod liver oil (about 48 Steenbock D units: defined by the Council on Pharmacy and Chemistry of the American Medical Association, N. N. R., 1932, p. 423).

Claims of Manufacturer.—A food especially prepared for infants, children and convalescents.

SALLY ANN BREAD

Manufacturer.—Hagerty Baking Company, Philipsburg, Pa.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817) prepared from patent flour, water, yeast, a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, salt, sucrose, lard, malt extract and sweetened condensed milk.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	35.6
Ash	1.7
Fat	3.3
Protein (N × 6.25)	9.0
Reducing sugars as invert sugar	3.7
Sucrose (copper reduction method)	0.1
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	50.1

Calories.—2.7 per gram; 77 per ounce.

RED CHAIN FLOUR (EXTRA HIGH PATENT)—(BLEACHED)

Manufacturer.—Universal Mills, Fort Worth, Texas.

Description.—A short patent hard winter wheat flour for bread baking; bleached and "matured."

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (3 Gm. per barrel) and a mixture of calcium phosphate and benzoyl peroxide ($^{36}/_{100}$ ounce per barrel) and automatically packed in new cotton sacks.

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.5
Ash	0.37
Fat (ether extraction method)	1.5
Protein (N × 5.7)	11.4
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	72.8

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—A short patent hard wheat flour designed for bread baking.

McCORMICK'S MAYONNAISE

Manufacturer.—McCormick and Company, Inc., Baltimore.

Description.—Mayonnaise in glass jars; containing refined corn oil, egg yolk, distilled vinegar, salt, sucrose, mustard and paprika.

Manufacture.—Egg yolk, salt, sugar, mustard and paprika in definite proportions are mixed; the mixture and the corn oil ingredient are emulsified. The emulsion is diluted with distilled vinegar and water. The mayonnaise conforms to the United States Department of Agriculture standard.

Analysis (submitted by manufacturer).—

	per cent
Moisture	15.9
Ash	1.1
Water soluble ash (salt)	1.0
Fat (ether extract)	79.4
Protein (N × 6.25)	1.5
Sucrose	1.1
Crude fiber	0.0
Carbohydrates (by difference)	1.6
Titratable acidity as acetic acid	0.5
Lipoid phosphoric acid (P_2O_5)	0.064
Total phosphoric acid (P_2O_5)	0.107

Calories.—7.3 per gram; 207 per ounce.

Claims of Manufacturer.—A standard mayonnaise for table use.

KRE-MEL DESSERT (CARAMEL FLAVOR)

A Mixture of Sugar (Dextrose and Sucrose), Corn Starch, Caramel and Vanillin

Manufacturer.—Corn Products Refining Company, New York.

Description.—Mixture of dextrose, corn starch, sucrose; flavored with caramel and vanillin.

Analysis (submitted by manufacturer).—

	per cent
Moisture	7.0
Ash	0.9
Fat (ether extract)	0.1
Protein (N × 6.25)	0.1
*Dextrose	49.0
*Sucrose	20.0
*Starch	23.6
Crude fiber	0.0
Titratable acidity as HCl	0.3
Vanillin flavor	present

* Estimated from formula.

Calories.—3.7 per gram; 105 per ounce.

Claims of Manufacturer.—A dessert powder for the simple preparation of table desserts.

MITY GOOD GOLDEN TABLE SYRUP

(85 Per Cent Corn Syrup, 15 Per Cent Refiners' Syrup)

Packer.—D. B. Scully Syrup Company, Chicago.

Distributor.—Fox River Grocery Company, Appleton, Wis.

Description.—A table syrup; a corn syrup flavored with refiners' syrup.

Manufacture, Analysis, Calories, Claims of Manufacturer.—See these sections for Banner Blue Corn Syrup with Cane Flavor (THE JOURNAL, March 5, 1932, p. 817).

UNIVERSAL BAKERS FLOURS (PATENT) (BLEACHED)

Manufacturer.—Universal Mills, Fort Worth, Texas.

Description.—A patent hard winter wheat flour for bakeries; bleached and "matured."

Manufacture.—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (3 Gm. per barrel) and a mixture of calcium phosphate and benzoyl peroxide ($^{36}/_{100}$ ounce per barrel) and automatically packed in new cotton sacks.

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.5
Ash	0.41
Fat (ether extraction method)	1.5
Protein (N × 5.7)	11.8
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	72.4

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—A patent hard wheat flour for bakeries.

MEYER'S CORN SYRUP WITH CANE FLAVOR

Packer.—D. B. Scully Syrup Company, Chicago.

Distributor.—Meyers, Walnut Ridge, Ark.

Description.—This table syrup is the same product as Banner Blue Corn Syrup (THE JOURNAL, March 5, 1932, p. 817); corn syrup base (85 per cent) with refiners' syrup (15 per cent).

REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

RAYMOND HERTWIG, Secretary.

KING MIDAS FLOUR (BLEACHED) NOT ACCEPTABLE

The King Midas Mill Company, Minneapolis, voluntarily submitted to the Committee on Foods a hard spring wheat patent flour called "King Midas Flour."

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.5
Ash	0.40
Fat (ether extraction method)	1.4
Protein (N × 5.7)	11.5
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	73.0

Discussion of Label and Advertising Slogan.—The slogan "The highest priced flour in America, and worth all it costs" appears on the package label and is used in promotion of the flour. The Committee considers this slogan as overtly incorrect and misleading. The company when informed of this opinion did not provide any information to show that the slogan is warranted for the flour and refused to change it to accord with the Committee's recommendations. This flour therefore cannot be listed among the Committee's accepted foods.

SCHULZ BUTTER-NUT BREAD NOT ACCEPTABLE

The Schulz Baking Company, Pottstown, Pa., submitted to the Committee on Foods a white bread called "Schulz Butter-Nut Bread," prepared by the sponge dough method from patent flour, water, sucrose, dry skim milk, hydrogenated shortening, salt, yeast, malt extract, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	34.2
Ash	1.9
Fat	1.4
Protein (N × 6.25)	10.2
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	52.1

Discussion of Name.—The name "Butter-Nut Bread" indicates that the bread contains either "butter and nuts" or "butter-nuts" and in such quantity as to give the product distinctive physical and nutritional characteristics because of such ingredients and different from the customary white bread. The baking formula contains neither butter, nuts, nor butter-nuts. The name is considered inappropriate, misinformative and misleading.

The manufacturer when informed of this opinion expressed himself as unwilling to change the name in accordance with the Committee's recommendations. This bread therefore cannot be listed among the Committee's accepted foods.

KORN'S POTAYTO BREAD NOT ACCEPTABLE

H. Korn Baking Company of Clinton, Iowa, voluntarily submitted to the Committee on Foods a white bread called "Korn's Potayto Bread," prepared by the sponge dough method from patent flour, water, sucrose, sweetened condensed skim milk, a partially hydrolyzed starch, salt, yeast, lard and yeast foods containing, respectively, calcium sulphate, ammonium chloride, sodium chloride and potassium bromate and a mixture of calcium acid phosphate and calcium peroxide.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	34.4
Ash	1.1
Fat	0.9
Protein (N × 6.25)	9.0
Crude fiber	0.2
Carbohydrates other crude fiber (by difference)	54.4

Discussion of Label and Name.—The name "Potayto Bread" and facsimiles of potatoes on the label indicate the presence of a material quantity of potato ingredient in the baking formula, sufficient to give the bread physical, flavor or nutritional characteristics differing essentially from the usual white bread. The baking formula does not contain any potato material; the name "Potayto Bread" and the potato facsimiles on the label, therefore, are considered unwarranted, misleading and false.

The manufacturer when informed of this opinion expressed himself as unwilling to change the name and label in accordance with the Committee's recommendations. This bread, therefore, cannot be listed among the Committee's "accepted" foods.

GENERAL COMMITTEE DECISIONS

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISIONS ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD ADVERTISING.

RAYMOND HERTWIG, Secretary.

FEEDING FORMULAS FOR INFANTS IN LAY ADVERTISING

The feeding of the baby during the first year is of fundamental importance to its health. Wrong feeding may even be fatally disastrous. For this reason every infant, the breast fed and doubly so the artificially fed, should be under the supervision of the physician who is experienced and skilled in the care and feeding of infants.

The feeding of an infant by routine feeding formulas and instructions distributed by food manufacturers, or according to directions, printed material, or advice of any person other than the attending physician who can personally observe the condition of the baby, may seriously endanger the health of the infant.

The promulgation of feeding formulas in advertising to the laity is considered to be in conflict with the best experience, authoritative judgment, and basic principles in infant feeding and is not permissible. No objection is taken to published directions for the preparation of mixtures for use in infant feeding.

FOOD ADVERTISING CLAIMS WITH SCIENTIFIC OR TECHNICAL SIGNIFICANCE

Statements or claims in food advertising with technical, scientific, nutritional, physiologic or "health" significance shall be carefully phrased so as to be in complete accord with established knowledge and authoritative opinion, and shall be free from misleading or incorrect popular implications or interpretations.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 30, 1932

THE ANAPHYLACTIC HORMONE

Most clinical allergists emphasize the specific protein reactions of the fixed tissue cells, the purely humoral reactions being assumed to be of minor pathologic interest. Two hypotheses are advocated to account for the resulting cellular intoxication. The first hypothesis assumes that the alien protein-cellular conjugation is in itself a sufficient stimulant to cause contractions of smooth muscle and other local cellular responses. The second hypothesis assumes that the specific colloidal cellular conjugation is in itself relatively nontoxic but leads to a local explosive formation or liberation of highly reactive "allergic hormones," which "anaphylatoxins" act as the immediate local and constitutional intoxicants. The two hypotheses are of more than academic interest, since they suggest quite different methods of treatment. As yet a final conclusion cannot be drawn as to the relative importance of the primary colloidal and secondary hormonal reactions in human anaphylaxis. However, the existence of a secondary allergic toxic factor can no longer be doubted if one is to credit the current biochemical studies by Dragstedt and Gebauer-Fuelnegg [1] of Northwestern University Medical School, and the simultaneously reported anaphylatoxin studies by Bartosch, Feldberg and Nagel [2] of the physiologic institute at the University of Berlin.

Up to the current year the most convincing experimental evidence in support of the explosive formation of an "allergic hormone" was probably the physiologic analyses of canine anaphylaxis by Manwaring and his co-workers [3] of Stanford University. With the usual degree of canine sensitization, anaphylactic contractions of the uterus, urinary bladder and other smooth muscle structures do not take place in dehepatized dogs. Normal canine tissues, such as the urinary bladder, rectum or intestinal loop, transplanted into hypersensitive dogs are thrown into contraction on injection of the specific foreign protein into the resulting composite animal. These results strongly suggest that the smooth muscle contractions of canine anaphylaxis are secondary allergic phenomena, due to histamine-like autointoxicants explosively formed or liberated by the hypersensitive liver. Blood drawn from the carotid artery, immediately after the development of recognizable anaphylactic symptoms, contains no histamine-like factor demonstrable by transfusion into normal dogs. By drawing initial shock blood directly from the liver (i. e., from the ligated vena cava), however, all the characteristic features of somatic anaphylaxis can be reproduced by transfusion into normal dogs. This blood does contain a histamine-like factor.

Confirmation and extension of this work are currently reported by the Northwestern University research group. Physiologic assays of canine thoracic duct lymph, for example, the isolated guinea-pig intestine being the reacting index, demonstrated the presence of this anaphylactic shock hormone. In some experiments 0.25 cc. of this shock lymph added to a 200 cc. bath of Tyrode's solution was sufficient to throw the isolated guinea-pig intestine into a typical histamine-like tetanus. In other experiments as much as 5 cc. of the shock lymph was required to produce the same result. In no instance did normal canine lymph, even in doses up to 20 cc., have any demonstrable histamine-like effect. Chemical studies showed the anaphylactic hormone to be thermostable and dialyzable. The dialysate led to a typical allergic wheal when injected intradermally into human skin. The allergic hormone accumulates in the basic chamber of a three compartment electrodialyzer and is neutralized by condensation with diazotized sulphanilic acid. From this and other experimental evidence the Chicago biochemists are inclined to believe that the canine lymphatic anaphylactic hormone is identical with histamine or, at least, that histamine is its dominant factor.

A similar though less pronounced explosive histaminemia presumably takes place in anaphylactic guinea-pigs. Bartosch and his co-workers transfused hypersensitive guinea-pig lungs with Tyrode solution plus specific foreign protein. The initial 5 cc. sample of the transfusate invariably contained factors that contracted smooth muscle and reduced blood pressure. Subsequent samples were less reactive. After the fourth sample the transfusate was physiologically inert. The German investigators estimate that the equivalent of from 0.0005 to 0.0040 mg. of histamine was thus explosively formed or liberated by the transfused lungs. They also are of the opinion that the shock hormone is identical with histamine and are inclined to attribute the occluding bronchoconstriction of guinea-pig anaphylaxis solely to this explosive toxic factor. The amount of histamine demonstrated by their transfusion

1. Dragstedt, C. A., and Gebauer-Fuelnegg, E.: Proc. Soc. Exper. Biol. & Med. **29:** 891 (April) 1932. Gebauer-Fuelnegg, E.; Dragstedt, C. A., and Mullenix, R. B.: Ibid., May, 1932.
2. Bartosch, R.; Feldberg, W., and Nagel, E.: Arch. f. d. ges. Physiol. **230:** 129 (May) 1932. The Histamine Factor in Anaphylaxis, editorial, J. A. M. A. **98:** 2143 (June 11) 1932.
3. Manwaring, W. H., and others: J. Immunol. **10:** 567, 575 (May) 1925.

tests is more than adequate to produce occluding bronchoconstriction in transfused normal guinea-pig lungs.

While a final conclusion as to the importance of explosive histaminemia in human anaphylaxis cannot be drawn from these data, the experimental evidence in favor of the existence of this secondary anaphylactic toxin is conclusive. The nature and method of formation of this toxic factor are presumably quite different from those postulated a quarter of a century ago by Vaughan, Novy and other early supporters of the "anaphylatoxin" theory. Antihistamine therapy, however, becomes a logical procedure in clinical anaphylaxis.

RADIOSENSITIVITY OF CELLS

Although many of the procedures that form the basis of current medical practice were empirical in their conception, subsequent examination of the rationale, in the light of experimental biology, has often amplified their therapeutic and diagnostic value. Following the trend of scientific medicine today, it is likely that a background of evidence from experimental studies will be available in most cases before a mode of treatment is adopted in the clinic. In a recent discussion of radiology by Desjardins,[1] this point of view is emphasized. There is available, he points out, a mass of experimental data dealing with the effect, on cells, of x-rays and radium. On this evidence, radiologists can base clinical procedures. Not only are young cells affected to a greater extent by these types of radiant energy than are old ones but, what is more important from the practical point of view, each functional type of cell has, within limits, a specific range of sensitiveness to radiation. It appears that the variety is a more important factor in its reaction than the normal or pathologic state of the cell.

A comparison of the various types of cells on the basis of their reaction to radiation indicates that lymphocytes are more sensitive than are other types. When the entire body of animals is exposed to x-rays, there is a marked destruction of lymphocytes. This can be observed by examining those organs or tissues in which the lymphocytes are localized. There is a fragmentation and disorganization of the nuclear material, the débris being subsequently removed by phagocytosis. The degree of destruction varies with the exposure; with less intense radiation, some of the lymphocytes escape destruction and there is a slow regeneration of lymphoid tissue. It appears that in all types of cells the changes produced by radium and x-rays are more closely associated with the quantity than with the quality of radiation.

Next to lymphocytes, the cells most severely injured by radium and x-rays are those of the epithelium. The basal epithelium of the salivary glands is especially sensitive, undergoing mucoid degeneration. The cells enlarge and the occlusion of the ducts prevents egress of the saliva, the collection of which produces swelling and tenderness of the glands and dryness in the mouth. Repeated irradiation may even inhibit the secretory function of the glands. Endothelial cells of blood vessels, pleura and peritoneum, connective tissue cells, muscle cells, bone cells and nerve cells are decreasingly affected by radiation in the order named. A biologic response as widespread as that here discussed might well be sufficiently varied to render interpretation difficult. Desjardins points out that the alleged stimulating effect of roentgen and radium rays can be explained either by temporary acceleration of metabolism preceding an inhibition of function and cellular degeneration or by a secondary increase in connective tissue replacing cells that have been destroyed.

The therapeutic value of radiation is explained in some cases by the results obtained with experimental animals. Radium or x-rays exert a favorable influence on many inflammations. The rate of response of acute inflammations is so closely parallel to the known rate of destruction of lymphocytes that the removal of these cells would appear to be the cause of the favorable reaction. Not only is the pain relieved but infection, if present, is effectively combated by the release of antitoxic substances from the destroyed bodies of the infiltrating lymphocytes. The situation is, in general, similar in respect to neoplasms. These are composed largely of normal cells, and the effect of radiation on the tumors agrees closely with that on like cells occurring elsewhere. With accumulation of the necessary information on the response of various types of cells to radium and x-rays, the cellular composition and thus the types of neoplasm can be distinguished by the response to radiation, and treatment planned accordingly. These studies indicate that, based on the histochemical reaction of cells to radiant energy of this kind, the use of radium and x-rays may be extended into further fields of practical application in medicine.

1. DesJardins, A. U.: The Radiosensitiveness of Cells and Tissues and Some Medical Implications, Science 75: 569 (June 3) 1932.

THE SCOT TISSUE QUESTIONNAIRE

In THE JOURNAL, July 16, there was published the results of an investigation by the A. M. A. Chemical Laboratory and the Bureau of Investigation of the charges made by the Scott Paper Company that two out of three toilet papers of 660 brands tested had been found unsafe and unfit to use. THE JOURNAL'S article proved conclusively that there was no basis for any such charge. Now the medical profession is being circularized by one Henry Legler, who writes on stationery that carries no name but does have the address Room 1018, at 420 Lexington Avenue, New York City. Inquiry at this room (which appears to be a storage room for the Scott Paper Company's advertising agency) brought the information that Mr. Legler could be found on the eleventh floor. This floor is occupied in

its entirety by the advertising agency in question—J. Walter Thompson Co.

In the combined letter and questionnaire that Legler sends to physicians, he states that he is "making a study of inferior toilet tissues and their relation to health for the Scott Paper Company." He then asks these questions:

"1. In your experience have you found that injury to mucous membranes may be caused by inferior toilet papers?

"2. What characteristics in the paper itself would be responsible for these troubles?

Harshness..... Acidity.....
Chemical Impurities..... Alkalanity.....
Other (please specify).....

"3. What qualities do you consider most desirable in toilet tissue? ....."

Few physicians indeed have had experience enabling them to express a scientific opinion on either of the first two questions; the latter part of the second question could not be answered by any physician who had not done special research work on the problem submitted. Furthermore, he would require quantitative data as to the chemical ingredients and methods of determining the thresholds of the hazards. The third question, of course, any physician could answer; so could any intelligent layman.

Legler, in addition to his questionnaire, encloses an advertisement of Scot Tissue that has been run in popular magazines; incidentally, the advertisement that was reproduced in miniature in THE JOURNAL'S article of July 16. It is headed in large type:

"Science finds Harmful Acids . . . Mercury . . . Arsenic in many brands of Toilet Tissue . . . 660 Brands tested . . . 2 out of 3 found 'Unsafe . . . unfit to use.'"

Then Legler asks, both in a postscript to his letter and as part of the questionnaire, that the physician addressed comment on this advertisement.

Time and again THE JOURNAL has commented on the questionnaire nuisance. Advertising agencies, at little more cost to themselves than that of postage, attempt to get from physicians expert testimony that can be used by them in preparing "copy" for their clients. If the facts thus obtained were not grossly distorted and used in an unscientific and even fraudulent way, the imposition might be condoned. Apparently there are some medical men who are so constituted that answering questionnaires of this kind is their favorite indoor sport. Dr. Robert L. Gilman of the Laboratory of Dermatological Research in the School of Medicine of the University of Pennsylvania, who sent in one of Legler's questionnaire letters with the accompanying Scot Tissue advertisement, writes to THE JOURNAL:

"The advertising agencies are at it again. Isn't there some way the complaisant and genial physician can be warned before the toilet tissue people have their ten thousand endorsers?"

The American Tobacco Company got some 18,000 answers—but after all, they sent cartons of cigarets. Where are the samples of toilet paper? Or perhaps this is to be in the nature of a blindfold test!

Current Comment

KOREMLU FAILS

In the department of THE JOURNAL devoted to reports by the Bureau of Investigation there appears in this issue a statement relative to the bankruptcy of the manufacturer of the product called Koremlu. The concern that put out this dangerous proprietary depilatory is reported to have gone into bankruptcy with assets of slightly less than $3 and with liabilities approximating two and one-half million dollars. The liabilities are said to consist in large part of a number of damage suits filed by persons who claim to have been seriously harmed through the use of this preparation. The announcement is of special interest as indicating to the public the background that exists for many cosmetic preparations and proprietary medicines. When a purchaser is harmed through the use of a product manufactured by a well established and reputable manufacturer he has at least the assurance of obtaining some mitigation in damages through the established routine of legal procedure. He knows that there exists the possibility of recourse in the courts or the possibility of a cash settlement for damage done. In the case of nostrums and cosmetic preparations manufactured by specialty manufacturers there is little if any possibility of collecting anything. Repeatedly it has been shown that as much as one half to two thirds of the total income of such manufacturers is spent for advertising in order that the products may continue to live, and that practically all the remaining income is distributed almost as soon as it is received. Any one who buys products of unknown composition for application either to the surface or to the interior of the human body in the treatment of human disease is trifling with health and with life. Moreover, he cannot, in the vast majority of cases, hope to recover anything in the way of monetary compensation for damages should harm result.

LIBEL SUITS

The American Medical Association has on occasion been obliged to defend itself against suits for libel entered in response to articles that were published primarily with a view to protecting the public against exploitation by the manufacturers of nostrums and by the promoters of unestablished methods of treatment of cancer, tuberculosis or other diseases. In preparing to defend these suits the American Medical Association has been put to some expense and officers of the Association have devoted to this purpose time and energy that might otherwise have been used for constructive activities. These thoughts are prompted by the fact that William L. White, son of the

distinguished William Allen White of the Emporia, Kansas, *Gazette,* recently commented editorially on the way in which the Kansas City *Star* has been compelled to defend itself against suits for libel filed in response to an attempt by the *Star* to inform readers concerning the price of gas in Kansas City. The suits were filed by the head of a public utility criticized in the articles published by the *Star*. In discussing these libel suits, Mr. White said, in part:

"First he [the head of the public utility who brings the suits] wants $12,000,000 personal heart balm for the rude things the *Star* has said about him, and second the Cities Service Company wants $30,000,000 more for alienation of the affections of the gas consumers, who, but for the *Star*, the company feels, would continue to pay predepression rates for gas and like it.

"Now what has the *Star* gained, in dollars and cents, by refusing to be bluffed? Nothing, so far as the cash drawer is concerned. These suits cost Doherty little additional cash outlay. He already has a high-priced string of lawyers on the payroll, tearing up the turf and feeling their oats from lack of exercise. They might as well be suing the *Star* as eating their heads off in idleness in the paddock. The *Star*, however, must dig down to hire its own string of lawyers, saddled, bridled and equipped to break lances against Mr. Doherty's windmills.

"The fundamental justice of the *Star's* case, the fact that it is conducting a disinterested fight for lower gas rates, will do nothing to reduce its cash outlay in defending itself.

"Speaking broadly and generally and with no reference to the *Star* and Doherty from the point of view of the cash register, this business of fighting the public's battles against high and exorbitant utility rates, instead of letting them fry in their own grease, isn't much of a job. The hours are long in the Don Quixote business, the pay is uncertain and working conditions are frankly lousy. But it's a steady job, and the *Star* has been plugging away at it for lo these 50 years."

The last paragraph is quite apropos to the campaign against exploitation of the public in the field of medicine that THE JOURNAL has been undertaking continuously for the last thirty years. The job is a never-ending one, for the gullibility of the public in matters medical seems unfathomable. Yet so long as the state —using the term in its broadest sense—fails to protect the public in this field, the organized medical profession has a moral obligation in the matter.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 10:45 to 10:50 a. m. over Station WBBM (770 kilocycles, or 389.4 meters). The Columbia chain program has been discontinued for the present.

The subjects for the week are as follows:

August 1. The Committee on Foods.
August 3. The Stethoscope.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 10:45 to 11, over Station WBBM.

The subject for the week is as follows:

August 6. Shall I Send My Child To Camp?

This schedule is based on Chicago Daylight Saving Time, one hour faster than Central Standard Time.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Fluorides in Water Supplies.—The state department of health reports in its bulletin that an investigation of fluorides in water supplies as the possible cause of mottled enamel of the teeth was continued during May. In a locality in the San Joaquin Valley it was found that fluorides were absent during the winter but, with the falling of the water tables, fluorides are found in increased amounts. Fluorides in high amounts were found in a new well which has been sunk in one of the southern coast cities. Because of the results that have been discovered already in this investigation, the bulletin states, it has been suggested to the U. S. Biological Survey that the fluoride test be established as a routine in the chemical analysis of water supplies.

San Francisco Regulates Clinics and Dispensaries.—An ordinance recently adopted by the city and county of San Francisco makes it unlawful to operate a clinic or dispensary without first obtaining a permit and license from the director of public health. A clinic or dispensary is defined as a person, place, establishment, corporation, institution, association, or agent whose purpose it is to furnish to any person, nonresident or ambulatory, in such clinic, either with or without charge, medical, surgical or dental treatment or advice, or medicine or apparatus, or drugless healing or manipulation, or mental and habit advice and treatment, including psychiatric and neurological advice, mental healing and faith cures of all types. The private practice of the healing art is exempted from the provisions of the ordinance. Minimum standards for the establishment and operation of clinics may be set up by the director of public health. Application for a permit must be in writing and must state the location or proposed location of the clinic, the purpose for which it is to be conducted, the accommodations for patients which it is to contain, the nature and kind of treatment to be given, the names and addresses of the person or persons making the application, and the names and qualifications of the person or persons who are to conduct the clinic or dispensary. If the director of public health finds after investigation that the clinic or dispensary will afford proper accommodations for patients and that the person or persons responsible for the maintenance and conduct of the clinic and the persons who are to conduct it fulfil the requirements of the ordinance, he is to issue the desired permit. Every licensed clinic and dispensary is to pay a fee of $6 per quarter. The director, or an authorized assistant, may at any time visit and inspect a licensed dispensary or clinic. He may, if public interest demands, and for just and reasonable cause, revoke a license. Any one violating the provisions of the ordinance or any person or persons obtaining medical or surgical care or other treatment from a licensed dispensary or clinic on false representation is subject to a fine of not less than $10 and not more than $200.

CONNECTICUT

Eighth Clinical Congress.—The Connecticut State Medical Society will hold its eighth clinical congress in New Haven, September 26-28. Meetings will be held in the Sterling Hall of Medicine and the New Haven Hospital. A registration fee of $5 is required. An advance program includes the following speakers: Drs. Henry K. Pancoast, Philadelphia, on "Pulmonary Disease Associated with Dust Inhalation"; Joseph C. Aub, Boston, "Metallic Poisoning"; Harrison S. Martland, Newark, "Radium Poisoning in Industry"; Francis C. Grant, Philadelphia, "Treatment of Traumatic Disorders of the Nervous System"; Theodore H. Weisenburg, Philadelphia, "Modern Methods of Neurological Diagnosis," and Lewellys F. Barker, Baltimore, "Commoner Functional Disorders of the Nervous System." A session on cancer will be addressed by Drs. Robert B. Greenough and William P. Graves of Boston; Fred W. Stewart, New York, and Henry Schmitz, Chicago. Round table discussions will be held, and there will be demonstrations in the sections of industrial medicine, cancer and diseases of the nervous system. Dr. James Ewing, New York, will address a public meeting on "Etiology of Cancer," and Dr. George H. Bigelow, Boston, the same session, on "Cancer as a Social Problem."

ILLINOIS

Personal.—Dr. William D. Hohmann recently gave his medical library of 500 books to St. Francis Hospital, Kewanee. ——Dr. Harry O. Veach has been appointed medical examiner of the Veterans' Administration in Kewanee.

Certificates Redeemable in Hospital Service.—What was said to be a unique plan for raising funds was carried out recently by the Highland Park Hospital, Highland Park. Certificates redeemable in hospital service were placed on sale in an attempt to raise funds necessary to continue operation of the institution. Many of the certificates may not be utilized, it was said, but purchasers of them will be assured hospital care should an emergency arise.

Chicago

Fatal Case of Psittacosis.—The death of one woman and the serious illness of two others was disclosed by the board of health, July 21, according to the Chicago *Tribune*. The woman, who died July 6, bought a pair of parrakeets from a pedler, June 18. Shortly before she became ill she was visited by two friends and they contracted the disease.

Personal.—Frank R. Lillie, Ph.D., dean of the Division of Biological Sciences, University of Chicago, was given the honorary degree of doctor of science by Yale University, June 22.——Dr. Clifford J. Barborka recently received the honorary degree of doctor of science from Simpson College, Indianola, Iowa. He gave the commencement address at this time.

Society News.—Dr. Bertha Van Hoosen gave an address at the Navy Pier, July 26, on "Self Control," which was one in a health series given by physician members of the Chicago Woman's Club during July and August.——Officers elected at the annual meeting of the Chicago Urological Society, May 25, are: president, Dr. Gustav Kolischer; vice president, Dr. Benjamin E. Fillis, and secretary, Dr. Leslie L. Veseen.

IOWA

Society News.—Dr. Adam Weaver, Cumberland, addressed the Cass County Medical Society in Griswold, June 14, on "Carpal Fractures and Their Significance."——Speakers before the Jackson County Medical Society, June 9, were Drs. Anthony C. Pfohl, Iowa City, on "Acute Intestinal Obstruction"; John F. Ritter, Maquoketa, serum therapy, and Nathaniel G. Alcock, Iowa City, "Transurethral Prostatectomy."——A recent meeting of the Muscatine County Medical Society was addressed by Dr. Frederick H. Lamb, Davenport, on "Blood Picture and Certain Related Clinical Implications."——Dr. Arthur W. Erskine, Cedar Rapids, spoke before the Scott County Medical Society, June 7, on "The Graham-Cole Test."——At the meeting of the Four County Medical Society, Cherokee, June 14, Dr. Martin J. Joynt, LeMars, among others, talked on "Observations on Post-Tonsillectomy Patients."——A symposium on arthritis constituted the afternoon program of the Upper Des Moines Medical Society at Lake Okodoji, June 21.

KENTUCKY

Obstetrics in the Mountains.—Results of a study of the first thousand maternity patients among Kentucky mountain women cared for by the Frontier Nursing Service have recently been announced. Puerperal abnormalities developed in 287 women, or 29 per cent, and in 130 cases a physician was called. Eclampsia developed in 2, although 172 had toxic symptoms. Delivery complications occurred in 366 cases; forceps were used nine times. Two deaths occurred, one caused by chronic heart and kidney disease, the other by heart disease. Twenty-six stillbirths occurred among 1,015 babies and twenty-five died within a month after birth. Of the thousand women, 96 per cent were reported to be in satisfactory condition one month after delivery. The Frontier Nursing Service is a volunteer service to citizens of the Kentucky mountains, directed by Mrs. Mary Breckenridge of Kentucky and New York.

LOUISIANA

Society News.—Through the efforts of Dr. Daniel N. Silverman, New Orleans, the Second District Medical Society was recently organized. The name of Dr. Silverman was inadvertently omitted from the item in THE JOURNAL, July 9, page 140.——Dr. Oscar W. Bethea, New Orleans, addressed the Seventh District Medical Society, June 16, at Lake Charles, on angina pectoris.

Health at New Orleans.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended July 16, indicate that the highest mortality rate (23.1) appears for New Orleans, and the rate for the group of cities as a whole, 10.1. The mortality rate for New Orleans for the corresponding week last year was 15.3, and for the group of cities, 10.3. The annual rate for eighty-five cities for the twenty-eight weeks of 1932 was 11.8, as against a rate of 12.7 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

MARYLAND

Clinics for Crippled Children.—Fifty-five children were treated at Salisbury and Snow Hill recently, when clinics were conducted by the Maryland League for Children on the Eastern Shore. Dr. Albertus Cotton, professor of orthopedic surgery and roentgenology, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, directed the work. It is planned to hold clinics at Chestertown and in Charles and St. Mary's counties.

Tour of the Healthmobile.—Child health conferences will be held in more than sixty places in southern Maryland and on the eastern shore during the summer tour of the healthmobile of the bureau of child hygiene, state department of health. The "health bus," which stopped in St. Mary's County until July 15, was located in Charles County, July 18-29. The provisional schedule for the remainder of the season will be Calvert County, August 1-12; Kent County, August 15-24; Queen Anne's County, last week in August, and Somerset County, September 6-15. The arrangements at each place are being made by the county health officer and the public health nurse. The staff of the healthmobile includes a physician who has had special training in the care of infants and young children, and a dentist. The car is equipped with things needed for a complete physical examination, including a dental chair and dental appliances. Health films are shown in the evenings. The aim of these conferences is to show mothers how to keep their children well. No medical treatments are given. Children in need of medical care are referred to their own physicians. Last year more than 2,000 children were brought to the conferences held in connection with the visits of the healthmobile to the same counties, and more than 1,100 were given dental care.

MASSACHUSETTS

Prize as a Memorial.—Harvard University is bequeathed a fund of $20,000 by the will of the late Mrs. Frida Adler, widow of Dr. Isaac Adler, New York, to establish a triennial prize in his name for research in medical or allied sciences. Dr. Adler was professor of clinical pathology at New York Polyclinic Medical School.

Personal.—Boston University conferred the honorary degree of doctor of science on Drs. Frank B. Mallory, professor of pathology, Harvard University Medical School, and William P. Graves, W. H. Baker professor of gynecology, Harvard University Medical School.——Dr. Charles Stanley Raymond, Boston, assistant commissioner, state department of mental diseases, has been appointed superintendent of the Wrentham (Mass.) State School.

Smallpox in Fitchburg.—Only three in a total of sixty cases occurring early in 1932 in Fitchburg, were among vaccinated persons, and none of the three had been vaccinated within the last forty-five years. The sixty cases occurred among immigrants or children of immigrants from Canada, and all but two from the province of New Brunswick. Fifty-six of the cases occurred in a section of the city called Cleghorn, which is populated largely by French Canadians. According to the *New England Journal of Medicine*, this part of the city was the least protected by previous vaccination, about 22 per cent being unvaccinated. Within five days, 40,000 people were vaccinated or revaccinated.

Licenses Restored, Revoked and Suspended.—At a special meeting, June 23, of the board of registration in medicine, the licenses of Drs. Joseph N. Tessier, New Bedford, and Louis A. Hermann, Brookline, were restored. Dr. Tessier's license had been revoked, Dec. 16, 1926, on account of abortion, and that of Dr. Hermann, Nov. 16, 1916, for violation of the Harrison Narcotic Act. The license of Dr. Dixie G. Hoyt, Leominster, was revoked at this meeting because of his court conviction on the charge of performing an illegal operation. The license of Dr. Frank Steele Garrett, Chelsea, was suspended. Dr. Garrett has been admitted to the Danvers State Hospital. The board suspended the license of Dr. Carlos Mata, Boston, for one month ending July 25, for deceit in the practice of his profession.

MICHIGAN

Golf Match Between Seniors and Juniors.—The Seniors, an organization composed of members of the Wayne County Medical Society, Detroit, who have been in active practice for twenty-five years or longer, has accepted a challenge from the Noon Day Study Club, physicians under the age of 40, for a golf match at Meadowbrook Golf Club, August 3. It is anticipated that at least twenty-five matches will be arranged, the losers to pay for the winners' dinners.

Hospital News.—The new $300,000 hospital at the Michigan Farm Colony for Epileptics at Wahjamega was opened, July 8. One hundred patients were expected to have been accommodated by the new two story structure by July 15.——A gift of $25,000 was recently presented to Harper Hospital Cancer Clinic by Mrs. Hetty Speck, Grosse Pointe, to be used for the purchase of radium. A room in the clinic will henceforth be known as the Speck Room.

MISSOURI

Tuberculosis Day.—August 17 has been set aside as Tuberculosis Day, when the people of the city and county of St. Louis will be asked to assist the Tuberculosis and Health Society in its campaign for funds to finance the health work through the coming fall and winter. The main event in the day's program of entertainment at Sportsman's Park will be a regular National League baseball game between the St. Louis Cardinals and Philadelphia. This year will mark the eighteenth time that Tuberculosis Day has been observed, and the fifteenth time that the Cardinals have participated in the charity. Although the main purpose of the the game is to raise money, it was reported, the celebration reminds people of the organized fight against tuberculosis and impresses on them the need for a constant, well planned program to combat the disease.

MONTANA

State Medical Election.—Dr. John R. E. Sievers, Butte, was installed as president of the Medical Association of Montana at its recent annual meeting in Miles City. Dr. Byron L. Pampel, Livingston, was named president-elect. Dr. John A. Evert, Glendive, was elected vice president, and Dr. Elmer G. Balsam, Billings, reelected secretary. The next annual meeting of the association will be held in Anaconda.

NEBRASKA

Dinner to Dr. Phillips.—Dr. and Mrs. Clark L. Phillips, Dixon, were given a farewell dinner, June 27, by members of the Northeast Nebraska Medical Association. Dr. Phillips, who has been a member of the society for almost twenty years, is a past president of the organization. He and his wife were presented with a silver and gold sugar and creamer set. They left for Superior, June 30, where Dr. Phillips plans to engage in practice. Among those in attendance at the dinner, which was given at the home of Dr. John D. Lutton, Laurel, was Dr. Arthur E. Cook, Randolph, president, state medical society.

NEW HAMPSHIRE

Inspection of Tourist Camps.—Since April 13, when the new code of regulations governing the sanitation of tourist camps, tourist homes, tea rooms, hotels and inns and other roadside places became effective, up to July 1, a total of 616 inspections have been reported. Of this number, 456 were of places eligible under the regulations to display the official sign. A number of places, classable in other respects as excellent, have been debarred from accreditation because of the water supply being conducted through lead pipe. Deficiences found in the current inspection include: failure to have water supply analyzed; well or spring not adequately protected; use of unchlorinated lake or brook water; no water supply on grounds; bottled milk law not observed; cabins too small or not screened; poor beds and insanitary swimming pool.

NEW JERSEY

The Certification of Specialists.—Following the recent adoption of a plan by the house of delegates of the Medical Society of New Jersey, the organization of a state committee on credentials for accrediting members for special practice has been approved. Dr. John F. Hagerty, Newark, past president, state medical society, was selected to serve as chairman of the committee for the first year, which is expected to begin in October. To be recognized as a specialist, a member must present his request to the local society. If this organization approves, the request is endorsed and passed up to the state society for action. There shall be no county or state machinery set up for examination of a man's scientific attainments. Certification of national examining boards will have value in association with the local consideration of his personal qualifications other than scientific, and members failing to satisfy the committees otherwise as to scientific attainments will be referred to such examining boards. If rejected, the applicant has the power to appeal. Decisions of the state committee on these appeals shall be final unless otherwise determined by the trustees or house of delegates of the state society. The following qualifications of applicants wishing to be designated as a specialist will be considered:

1. Acquaintanceship with, and recognition by, his professional associates as an honest, conscientious and ethical physician.
2. Fellowship in the American College of Surgeons or the American College of Physicians; a diploma from one of the National Examining Boards—ophthalmology, otolaryngology, obstetrics and gynecology; membership in the American College of Radiology or the Radiologic Society of North America, or membership in the American Psychiatric Society.
3. Members of the Medical Society of New Jersey holding appointments on a hospital service, in a special branch of medicine or surgery or any of the recognized specialties, whose service is sufficiently active to afford attainment of a high degree of proficiency, and the duration of whose appointment has been at least five years.
4. Those who may later receive, from recognized colleges or other teaching institutions, certificates showing completion of graduate courses of instruction leading to the degree of "master" in any branch of medicine or surgery.
5. Evidence of continuous, active, successive practice during at least ten years, marked by study, travel, active membership in medical societies, and proof of special ability in their chosen fields of practice.

A suitable certificate, carrying the seal of the state medical society and subscribed to by the committee on credentials, will be presented to the approved applicant at the annual meeting of the society. To defray the cost of certification, a charge of $25 shall be made, payable before the certificate of qualification as a specialist is issued. The state society reserves the right to revoke any certificate issued, on proof being shown that fraud or misrepresentation was used in obtaining certification.

NEW YORK

New York City

District Branch Society Takes Up Golf.—For the first time, the Second District Branch Medical Society had an outing meeting, June 8, at the Lawrence Country Club. The county societies of Kings, Nassau, Queens and Suffolk, with a membership of more than 3,200 physicians, were represented by more than 80 members. The Medical Society of the County of Queens was host. Kings County won the cup, which will be played for each year. It was provided by the branch society, to be awarded to the county society presenting the best average score. Individual prizes also were presented. The toastmaster was the president of the Queens society. At this outing, two members of the branch society who graduated in medicine in 1893 met for the first time since their graduation.

Campaign Against Illegal Practitioners.—Twelve alleged illegal practitioners are reported to have been held for trial in the court of special sessions in a recent drive carried on under the direction of Dr. Harold L. Rypins, Albany, secretary, state board of medical examiners, and Deputy Attorney General Sol Ullman. Among those who were detained are a high school student, Norris F. Roach, charged with distributing a German "pep" compound; "Bishop" F. S. Green, "who operates the Temple of Progressive Spiritualists, Inc., and manufactures a cure-all," and Larat Chari Nandi, who operates "the Hindu Products Manufacturing Corporation and distributes an ointment called the Hindu balm and the Hindu life-builder." Another operates under the name of the "American Indian Trading Post" and produces a concoction for the special treatment of lung infections, according to the newspaper report.

Dr. Graham Lusk Is Dead.—Graham Lusk, for more than twenty years professor of physiology at Cornell University Medical College, aged 66, died, July 19, in a hospital where he had been ill about a week. Dr. Lusk graduated from Columbia University in 1887. He received the degree of doctor of philosophy from the University of Munich in 1891 and an honorary degree of doctor of medicine from the same institution in 1929. Yale University conferred the honorary degree of master of arts in 1896 and the doctor of science degree in 1909, and the University of Glasgow the degree of doctor of laws in 1923. Dr. Lusk held teaching positions in physiology at Yale University from 1891 to 1898. In that year he became associated with University and Bellevue Hospital Medical College. Since 1909 he had been professor of physiology at Cornell University Medical College. Dr. Lusk

was an authority on nutrition. He was the author of "Elements of the Science of Nutrition" and "Fundamental Basis of Nutrition." He was a member of several international food commissions, including the Inter-Allied Scientific Food Commission, 1918. He was scientific director of the Russell Sage Institute of Pathology, and an Associate Fellow of the American Medical Association.

OHIO

Personal.—Dr. George D. Blume has been appointed city physician of Portsmouth.——Dr. and Mrs. John B. May, New Holland, recently celebrated their sixtieth wedding anniversary. Dr. May, who is 90 years of age, is president emeritus of the Pickaway County Medical Society. He recently retired after fifty-seven years of practice.——Announcement has been made of the appointment of Dr. William P. Johnson, Columbus, as chief of the bureau for prevention of blindness, state department of health, and Dr. Reaves W. DeCrow, Portsmouth, of the bureau for the control of venereal diseases.——Dr. Robert T. Leever, South Charleston, has been chosen public health commissioner of Pike County.

Principles of Admissions to Dispensaries.—The Academy of Medicine of Cleveland, after six months of conference with social agencies of the city, has announced the following principles of admission to dispensaries:

(*a*) All social agency workers agree to refer all cases which at one time or another have been under the care of a private physician back to that physician. No time limit is set to this principle.

(*b*) It is agreed that all other persons who now or ultimately might be able to pay something should be referred by the social worker to a neighborhood physician.

(*c*) The outpatient departments of all the hospitals agree, through their social service departments, to follow the two courses of action outlined above.

The new plan, which is to be applied only to new admissions, will be administered by a central committee representing the major groups involved. The academy will compile lists of physicians for the agencies, which will ask the patient to select a physician when he has no personal medical adviser. The physician to whom such a patient is referred will then (1) treat the patient for an agreed fee, (2) treat him free or on a deferred payment basis, or (3) refer him to a dispensary. Dispensaries receiving patients will report them to the central committee, which will maintain records and reports.

RHODE ISLAND

Dr. Messinger Awarded Fiske Fund Prize.—Dr. Harry C. Messinger, Providence, was given the annual Fiske Fund Premium for his dissertation on "The Value of Ocular Signs and Symtoms in the Diagnosis of General Disease." This fund was established nearly 100 years ago by Caleb Fiske, with the idea of encouraging original work on the part of members of the society, of which he was one of the early presidents.

SOUTH CAROLINA

Personal.—Dr. James R. Young, Anderson, president of the South Carolina Medical Association, and Mrs. Frank P. Wrenn, Anderson, president of the state women's auxiliary, were guests of honor at a banquet given by the Anderson County Medical Society, June 8.——Dr. John H. Crooks, Atlanta, Ga., has been appointed health officer of Lexington County, to succeed Dr. Martin B. Woodward, who has been transferred to Aiken County. Dr. Woodward in turn succeeds Dr. William G. Bodie, who resigned because of ill health.——Dr. Hugh B. Senn, formerly of Beaufort, has been appointed health officer for Newberry County, succeeding Dr. Henry G. Callison.

VIRGINIA

University News.—The second postgraduate clinic for Negro physicans at the Medical College of Virginia was held, June 20-July 2, at St. Philip Hospital, a unit of the hospital division of the college. The work includes instruction in medicine, pediatrics, obstetrics, surgery, dermatology and clinical pathology.

Personal.—Dr. Irl C. Riggin, executive director of the American Heart Association for several years, with headquarters in New York, has been appointed director of county health work in Virginia. Dr. Riggin, who was formerly connected with health work in the state, succeeds Dr. Harry G. Grant, who resigned in June to become dean of the Dalhousie University School of Medicine, Halifax, Nova Scotia.

Second Course in Prenatal Care.—The area surrounding Richmond and Farmville has been chosen for the second circuit of courses in prenatal and postnatal care, which have recently been inaugurated as a part of the graduate work of the Medical Society of Virginia. The centers tentatively selected, subject to the approval of the local medical societies, are Richmond, Petersburg, Hopewell, Lawrenceville and Farmville. The work will be carried on from August 22 to October 28. An intensive course is being planned on the Eastern Shore, August 8-19. Two additional circuits of five centers are being arranged for the fall and winter months. The localities have not been selected.

WISCONSIN

Child Health Centers.—Cooperating with the bureau of child welfare of the state board of health, the local auxiliary of the American Legion has been sponsoring child health centers in Polk County. Physical examinations are conducted at these centers for all children of preschool age, and expectant mothers are urged to attend for prenatal care. Centers were held in Burnett County, Grantsburg and Osceola.

Traveling Clinic Carries on Diphtheria Campaign.—A two months' campaign against diphtheria began, July 6, when a motor bus began its tour of Milwaukee, supplementing the work of regular child welfare stations and clinics established on playgrounds, in parks, schools and churches. The bus was obtained through the cooperation of the Milwaukee Cooperative Milk Producers' Association and is equipped with physicians, nurses and supplies. The traveling clinic will visit each of the fifty-nine stations in the city twice during the campaign.

GENERAL

Association for Study of Paradentosis Organized.—Representatives of Germany, France and Switzerland organized an international association for the study of paradentosis, May 30, at a meeting at Frankfort-on-Main. This association, which plans to facilitate the exchange of ideas on paradentosis, has for its objectives the initiation of confrères into the study of paradentosis, which must be considered as of the same degree of importance as dental caries; the stimulation of a more intimate cooperation between internal medicine and odontology, and the study of paradentosis from the standpoint of its recognition by social agencies (in those countries which are interested in this phase of the question). For the present, the association will not publish its own journal but will arrange for the appearance of material on this subject in local dental journals. Meetings of the group will be presided over in rotation by each of the countries represented, the president to be named at the annual session. The first annual assembly of the international association for the study of paradentosis will be held at the University of Zurich, August 7. It is planned to form local national committees in various countries. Steps toward this end have already been taken in the United States. Those interested should communicate with Dr. Hermann Becks, George Williams Hooper Foundation for Medical Research, Second and Parnassus avenues, San Francisco. The general secretaryship of the international organization, represented by Jaccard and Held, has its headquarters at Geneva. It will have charge of collecting all articles relating to paradentosis and of indexing them.

League for Rehabilitation of Speech.—A plan for developing regional organizations in the field of disorders of speech, to be called the National League for the Rehabilitation of Speech, was created at the annual meeting of the American Society for the Study of Disorders of Speech in Detroit, Dec. 30-31, 1931. Since then, two regional leagues for the rehabilitation of speech have been organized: the Pacific League, for the far west, and the Central League for the central states. Two municipal units of the national league have been formed, one in St. Louis with Dr. Max A. Goldstein as chairman, and one in New York with Dr. Smiley Blanton as chairman. All regional leagues will meet jointly with the American Society for the Study of Disorders of Speech at its annual convention which this year will be held in St. Louis, November 25-26. Membership in the national league is open to any person who pays dues, which will include a subscription to a periodical in disorders of speech which the society plans to publish. In order to maintain high standards of scientific work for the league, the resolution which created it provides that, for the present, regional officers should be members of both the society and the league. The American Society for the Study of Disorders of Speech was inaugurated at the annual meeting of the National Association of Teachers of Speech at Chicago in December, 1926. Its objectives are to assume leadership toward the development of a strong national movement for the treatment of disorders of speech and to encourage cooperatively the

development of knowledge in this field. Dr. Elmer L. Kenyon, Chicago, is president of the American society, and Mr. Samuel A. Robbins, Boston, secretary.

Western Urologists Meet.—The Western Branch Society of the American Urological Association held its eighth annual meeting in Portland, Ore., July 1-2. Guest speakers and their subjects were Drs. William E. Lower, Cleveland, "A Discussion of the Prostate Problem"; Ernest Granville Crabtree, Boston, "A Consideration of the Functional Result of Surgery"; William P. Herbst, Minneapolis, "Practical Application and Value of Pyeloscopy," and Rex E. Van Duzen, Dallas, Texas, "Résumé of Six Years' Study of Cystoceles." Officers elected were: Drs. Frank S. Dillingham, Los Angeles, president-elect; and George W. Hartman, San Francisco, secretary. Dr. Archibald W. Hunter, Vancouver, B. C., became president.

Southern Pediatric Seminar.—The twelfth session of the Southern Pediatric Seminar is being held, July 25-August 6, in Saluda, N. C. Included on the program are Drs. Wilburt C. Davison, dean, Duke University School of Medicine; Horton R. Casparis, Nashville, Tenn., professor of pediatrics, Vanderbilt University School of Medicine; Oren Moore, Charlotte, N. C.; Edgar A. Hines, Seneca, secretary, South Carolina Medical Association; Stewart H. Welch, Birmingham, Ala.; Philip F. Barbour, Louisville, clinical professor of pediatrics, University of Louisville Medical School; William L. Funkhouser, associate professor of pediatrics and chairman of the department, Emory University School of Medicine, Atlanta, and William A. Mulherin, clinical professor of pediatrics, University of Georgia Medical Department, Augusta. The Southern Pediatric Seminar is a graduate summer course in methods of diagnosis, prevention and treatment of diseases of children and is designed especially for the general practitioner. It is conducted by a group of Southern pediatricians who have volunteered their services to create a teaching center where the latest developments in this branch of medicine may be presented. A fee of $25 is charged to keep the seminar on a self-supporting basis. All the lecturers and instructors are serving not only without compensation but at their own expense. Further information may be had from the registrar, Dr. D. Lesesne Smith, Infants' and Children's Sanitarium, Saluda, N. C.

CANADA

Personal.—Prof. Alexander Galloway of the department of anatomy, University of Saskatchewan School of Medicine, Saskatoon, has been appointed professor of anatomy at the University of Witwatersrand, Johannesburg, South Africa. —Dr. William E. Waugh, bursar and for many years a member of the teaching staff of the University of Western Ontario, London, was recently the guest of honor at a dinner celebrating the sixtieth anniversary of his graduation from McGill University School of Medicine, Montreal. The university, the city of London, fellow physicians and former students joined in the tribute.——Dr. William Warwick, St. John, N. B., was elected president of the Canadian Public Health Association at the recent annual meeting in Toronto. Dr. Warwick was appointed chief medical officer of health of New Brunswick on the resignation of Dr. George G. Melvin, Fredericton, who has since died.——Dr. Francis X. McPhillips, Vancouver, said to be the senior practicing physician in British Columbia, was the guest of honor at a dinner given by the nuns of St. Paul's Hospital, June 15, marking his retirement from the staff. He has been identified with the institution since its beginning in 1893.

CORRECTIONS

The Treatment of Skin Diseases by Physical Therapeutic Methods.—In the article by Dr. George Miller MacKee (THE JOURNAL, May 7, p. 1646) footnote 1 at the bottom of page 1653, second column, incorrectly refers to the *New York Medical Journal and Record* for Aug. 20, 1931, whereas the periodical referred to is the *Medical Journal and Record* Sept. 2 and 16, 1931.

Diabetic Coma with Blood Sugars Above One Thousand Milligrams.—In the clinical note by Drs. Charles J. Haines and Reuben Davis (THE JOURNAL, July 2, p. 24) the treatment in case 2 consisted of external heat, gastric lavage with 2 per cent sodium bicarbonate, soap suds enemas, hypodermoclysis of 1,000 cc. of 2 [instead of 5] per cent sodium bicarbonate and 1,000 cc. of physiologic solution of sodium chloride, with 500 cc. of 2 [instead of 5] per cent sodium bicarbonate and 20 Gm. of dextrose by proctoclysis. Incidentally the address of the authors, at the end of the article, should be 1315, instead of 803, Pine Street.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 2, 1932.

Maternal Mortality Undiminished

A fact causing much concern is that, while infant and general mortality have much declined, maternal mortality, despite the introduction of antenatal care, shows no decline. It is thirty years since the routine supervision of the expectant mother, normal as well as abnormal, was introduced by the late Dr. J. W. Ballantyne of Edinburgh. The widespread establishment of antenatal clinics has been one of the most important advances of preventive medicine of recent years. Dr. F. J. Browne, professor of obstetric medicine in the University of London and director of the obstetric unit of University College Hospital, in a paper on maternal mortality contributed to the *Lancet*, points out that while in 1911 the puerperal mortality was 3.87 per thousand live births, in 1930 it was 4.40 and that the figures for puerperal sepsis mortality were, respectively, 1.43 and 1.92. The mortality from eclampsia has not declined. Investigating the causes of this persistent high mortality, Professor Browne examined thirty-three reports of nine maternity hospitals of the highest standing in order to find the causes of death among women who had received antenatal care and the frequency of eclampsia among them. His conclusions are as follows: 1. Antenatal care cannot appreciably influence the frequency of death from postpartum hemorrhage or shock after easy uncomplicated labor, which accounted for 1 in 5 of the 173 deaths examined. 2. The incidence of complicated and obstructed labor from disproportion and similar causes is being diminished. But a good many cases are still unprevented and the discovery of others often leads to induction of premature labor and cesarean section. Professor Browne thinks that much of the interference is unnecessary and constitutes meddlesome midwifery. The figures show that instrumental induction of labor accounted for 8 deaths out of 173, even in the best surroundings and in well organized hospitals staffed by experts. He also thinks that cesarean section is often done unnecessarily and can be dangerous, even in clean cases in the best surroundings and with expert skill, as is shown by the fact that it accounted for 18 deaths out of the 173. "Women are saved from obstructed labor only to run the possibly less, but still considerable, risk of induction of labor and cesarean section. In possibly a quarter of such cases the operations were unnecessary." 3. Antenatal care can do little or nothing to prevent such frequent causes of death as antepartum hemorrhage, which accounted for 1 in 10 of all the deaths. Possibly more might be done by taking note of slight warning hemorrhages and admitting the patient immediately to the hospital. 4. In one seventh of the cases the causes were such as antenatal care could not prevent—rupture of the aorta in the second stage, cancer of the cervix, and influenzal bronchopneumonia. 5. Clinics are not doing all they might to prevent eclampsia. The defects are failure to estimate blood pressure, insufficiently frequent return visits, insufficient realization of the importance of edema as a premonitory sign, and delay in instituting adequate treatment.

Milk Consumption in the Great Cities

The Empire Marketing Board (an organization formed to promote trade within the British Empire), in publishing a report entitled "Milk Price Margins," states that the per capita consumption of milk, excluding cream, is lowest in London, Paris and Berlin. Each Parisian drinks about one-third pint of milk a day, and each Berliner two-fifths pint. In London the consumption is about midway between these two. The consumption of milk is highest in New York, Copenhagen and Hamburg.

The New Yorker drinks about a pint of milk a day, the citizen of Hamburg about four-fifths pint and the citizen of Copenhagen three-fourths pint.

Effects of Boresome Occupations on Health

In the annual report of the chief inspector of factories, the senior medical inspector, Dr. J. C. Bridge, calls attention to the beneficial effect of manual work on mind and body and emphasizes the importance of maintaining interest in work. He describes the uninterested worker as an industrial invalid. The pleasure of the craftsman is being crushed by the steady increase in mechanized processes, the result of which is seen in the tendency to a rise in sickness rates for what are termed "nervous disabilities" for want of a better name. Repetition undoubtedly creates a weariness not expressed in physical terms but in a desire by the worker for temporary relief from the enforced boredom of occuption in which the mind is left partially or entirely unoccupied. This fact must be recognized for the understanding of sickness records and absenteeism in the industrial population. Vastly more days are being lost from vague, ill defined but no doubt real disability due to ennui than from all the recognized diseases together. How is this problem to be dealt with? More interest in processes that are themselves dull must be created. Piece instead of time rates, promotion for efficiency, bonuses of holidays for unbroken time, and rest periods with change of posture and attention are a few of the suggestions for this growing problem.

PARIS

(From Our Regular Correspondent)

June 22, 1932.

Annual Meeting of the Pediatric Society

At the annual meeting of the Société de pédiatrie, held in the Hôpital des enfants malades, in Paris, under the chairmanship of Professor Lereboullet, the chief topic on the program was "Pulmonary Suppurations in the Child." Mr. Jean Hutinel considered abscesses due to pneumococcus infection and showed, in three cases, their spontaneous tendency to heal, which justifies delay. Nobécourt, Duhem and Kaplan reported an observation of the same kind. Lesné and R. Clément cited a case of recovery from lung abscess due to spontaneous pneumothorax. Le Mée, André Bloch and Soulas discussed the etiology and pathogenesis of lung abscesses; also the part played by the introduction of blood into the bronchi during tonsillectomy and mastoid trephination, basing their presentation on the researches of Mayerson. Le Mée considered the question as to whether it is better not to anesthetize a child completely, in order to preserve the cough reflex. In 20,000 tonsillectomies, he has not observed a single case of pulmonary abscess. André Bloch pointed out the good effects of the use of bronchoscopy on the evolution of pulmonary suppurations by facilitating drainage. Mr. Yselin described the indications for surgical intervention. He considered it better to wait two months before intervening, by treating with postural drainage and broncho-aspiration. He stressed the frequency of purulent pleurisy associated with lung abscesses. If pleurotomy is carried out too early, pneumothorax drives back the abscess into the deeper tissues and makes it inaccessible. If purulent pleurisy is treated on the principle of a waiting policy, there is no danger of pneumothorax developing, and the abscess heals spontaneously after it is opened into the pleura.

There were several communications on other subjects. Mr. Apert described a case of stenosis of the pulmonary artery. Mr. Astier cited a case of recovery from colipyuria due to Vincent's anticolibacillary serum. Blechmann and Montlaur spoke on infantile acrodynia. Mr. Mouriquand of Lyons presented a communication on rickets in which he distinguished two clinical forms, florid rickets, which heals readily, sometimes as a result of changes in hygiene, or by ultraviolet rays and viosterol; the second, hypotrophic rickets, in which all forms of treatment often remain ineffective. Professor Marfan holds also that rickets is a disease of variable forms. Mr. Lesné added that, in order to cure rickets, action should be taken while the child is still in the period of bone growth.

Treatment for Poisoning from Mushrooms

H. Limousin and G. Petit have proposed a new form of treatment for intoxication by Amanita phalloides, based on experiments made by one of them. The rabbit eats this mushroom without harm but may be killed by the subcutaneous injection of a weak dose of the juice of the mushroom. The rabbit has not, therefore, a complete organic immunity, but the toxin is neutralized in the digestive tract. Experiments performed on the cat, an animal highly sensitive to phalloid intoxication, have shown that a hepatotoxic toxin is neutralized by the ingestion of rabbit's stomach, but that there is another toxin (neurotoxin) against which the neuraxis of the rabbit is naturally immunized and which may be neutralized in the cat by the brain of the rabbit. A comparative study of two groups of intoxicated persons has shown that the mixture of the stomach and the brain of the rabbit, in a fresh and ground state, has the same neutralizing potency in man that it has in the cat. In all cases reported by Limousin and Petit, this method proved completely successful, even in a case in which the therapeutic intervention was late; that is to say, three days after the toxic meal. The mixture used consisted of seven brains and three stomachs of rabbits freshly killed, the material being chopped and ground thoroughly.

International Conference on Syphilis

In a previous letter, mention was made of an international conference, held at the Hôpital St. Louis, on the occasion of the Alfred Fournier centenary, to discuss means of combating syphilis. The conclusions reached have recently been published in medical journals. The topic studied more particularly was neurosyphilis, which was considered from the points of view of pathogenesis and early diagnosis, prophylaxis and social importance. The first question led to an exchange of opinions on lumbar puncture in syphilis, with a view to establishing whether one should resort to this in all cases of syphilis, and if so, what the best time was for such puncture. This intervention cannot, it seems, be reserved for cases in which nervous symptoms have developed, for Mr. Ravaut has shown that there are latent cases of neurosyphilis that, if detected by lumbar puncture, can be arrested. Moreover, since it is difficult to repeat the puncture in the same patient, an opportune moment must be chosen. The time suggested by Mr. Sézary was the end of the first year, for that is the period of benign and transitory cerebrospinal reactions, in which one cannot distinguish the grave from the nongrave, while Mr. Ravaut recommended the end of the third year, which is the period in which treatment has usually been relaxed, and possibly it would be better to detect the neurosyphilis earlier, in order to intensify the treatment. In view of the difficulty of establishing a rule and the necessity of allowing the physician to be the judge in each case, the conference, "considering that lumbar puncture is the best means of determining the state of the nervous system during the course of syphilis, holds that it is necessary to apply the puncture during decisive stages in the course of the disease."

The second interesting point for the practitioner was the discussion of the following proposition: Has arsenotherapy increased the frequency of neurosyphilis? Some competent writers have made this charge against arsenicals, and Dujardin and R. Bernard have emphasized the beneficent rôle of the secondary efflorescence, which immunizes the patient against more grave forms of syphilis, a rôle that is thwarted if syphilis is treated too early. The arguments of Dujardin and the research of R. Bernard are impressive, but it is impossible as yet to express a final opinion. With reference to the question

whether or not intensive arsenotherapy favors the development of neurosyphilis, the conference expressed itself in a categorical manner. Supported by Jadassohn, Nicolau, Hudelo, Milian, Nicolas, Cavaillon and Sicard de Plauzoles, the whole assembly took a strong stand against such an idea, showing that neurosyphilis frankly diminished, during the war (in spite of the increase in syphilis), as the result of the treatment in vogue. The resolution drawn up by Mr. Milian states: "Practitioners can be well satisfied with the action of present medicaments, and particularly the arsphenamines, which have been used since 1910." The social campaign against syphilis and the results accomplished in this field merit the appreciation of the physician.

The Sanitary Condition of Morocco

A controversy has developed in the Academy of Medicine in regard to the sanitary conditions in Morocco. Mr. Remlinger, director of the Institut Pasteur of Morocco, gave out recently a startling statement in which he charged that health conditions in Morocco were deplorable; that the vaccinations were inadequate, and that, therefore, many diseases were carried to France by incoming Moroccans. The title of his article was somewhat abrupt: "The Moroccan as an Infecter." At the next session of the academy, Mr. Léon Bernard presented a protest of Dr. Colombani, director of the public health service of Morocco. According to Colombani, the facts are just the reverse. Morocco, like other countries, has a pathology of its own, and the ordinary intercourse between nations, which is, of late years, greater than formerly, may carry disease germs to France and elsewhere; but, in reality, this pathology is not widespread, nor are there many instances of such disease transportation. The fact is, smallpox is less prevalent in Morocco than it is in England or the United States. Moreover, vaccinations in Morocco are diligently applied; during the first two months of 1932, nearly a million vaccinations were performed. The other pestilential diseases are being victoriously combated and are receding markedly. Typhoid is less frequent in Morocco than in the capital. As for malaria and amebiasis, these two diseases, while endemic in Morocco, show no tendency to spread to other countries. The rigorous sanitary measures adopted in Morocco not only afford the greatest security to the resident and transient European population but have likewise greatly improved the situation of the native population. The unjustified communication of Mr. Remlinger, who is an eminent bacteriologist and who was for many years director of the French Institut Pasteur in Constantinople, may be traceable to a feeling of resentment in not having secured in Morocco the post of director of public hygiene, which was given instead to Mr. Colombani. Such evidences of rivalry in the colonies are not particularly rare, but it is unusual for such controversies to be aired before the tribune of the Academy of Medicine.

Probable Identity of the Virus of Typhus and that of Exanthematous Fever

Confirming previous researches that have been made on crossed immunity in monkeys, Plazy and Germain presented recently to the Academy of Medicine an observation tending to demonstrate clinically the identity of the virus of exanthematous fever and that of typhus. These authors presented, last year, a similar observation. They report now the case of a patient affected with exanthematous fever, in whom daily injections of whole blood of convalescents from typhus, begun on the fourth day of the disease, brought a rapid clinical improvement, with recovery on the eighth day. This favorable evolution was controlled furthermore by several Weil-Felix reactions performed successively, and which dropped from 1/8.000 to 0 on the eighth day. The favorable action of this immunotherapy seems therefore to confirm the conclusion previously expressed by these authors that the virus of exanthematous fever and that of typhus are identical.

BERLIN

(From Our Regular Correspondent)

June 13, 1932.

Sterilization in the Light of Criminal Law

The question is being raised more and more frequently as to whether, with reference to birth regulation and the securing of a healthy posterity, in certain cases compulsory sterilization should be applied, or as to whether sterilization by a physician at the request and with the consent of the person to be sterilized is, or should be, permissible under the law. The opinion of so experienced a jurist as Oberreichsanwalt Prof. Dr. Ebermayer, former attorney general of the *reich*, is important, as he is a member of the commission engaged in drafting a new penal code for the German *reich*.

Supporters of compulsory sterilization call attention to the examples of various North American states in which, for a number of years, sterilization has been permitted, and emphasize that it is certainly to the interest of public welfare and public health that certain persons who are subnormal mentally or physically be prevented by sterilization from having offspring that are most likely to be a burden to society. In support of this, figures are cited. In 1893 there were 834 living descendants of an alcohol addict, a woman born in 1810, of which number 181 were prostitutes, 142 were beggars, 76 were major criminals and 7 were murderers. Prussia was obliged to spend for this family, by way of prison costs, social aid and the like, the sum of $1,200,000.

In spite of the arguments cited, Ebermayer does not favor the introduction of compulsory sterilization. It constitutes a drastic negation of the right of self-determination, which the legislator should not consent to, since the effects of sterilization on the character development of the person sterilized, and on the sexual impulse, are by no means fully understood. Furthermore, the "laws" of hereditary transmission are not so fully developed as yet that one can establish with certainty, in every case, whether or not an inferior progeny affected with moral and criminal taints is to be expected. This is also the predominant standpoint of medical science, as Ebermayer has shown in "Der Arzt im Recht."

It is quite another question as to whether or not a physician should be granted the right to perform sterilization in all cases in which the person to be sterilized requests it—or at least if certain preconditions are met. At present, such a permission is granted only when there are suitable therapeutic indications for sterilization, which is seldom the case. Under such circumstances the physician, if he sterilizes with the consent of the patient, is not amenable to punishment; but if he acts without, or contrary to, the desire of the patient, he is guilty of a bodily injury punishable by law.

A sterilization for any other than therapeutic reasons—for example, for social or eugenic reasons—a physician may not, according to existing laws, undertake, even though the party immediately affected expressly demands such intervention. In medical circles, however, contrary opinions are frequently advanced, and sometimes also in legal circles; it is admitted that the physician is punishable if he acts without, or against, the desire of the other party, but it is held that he is not punishable if the other party demands sterilization, or at least consents to it. This opinion is wrong. Sterilization for other than therapeutic purposes is, according to existing German law, an objectively illegal severe bodily injury. The question may be raised as to whether the law should be changed. As to sterilization for eugenic reasons, doubt may be expressed as to whether the "laws" of hereditary transmission are sufficiently developed and understood to enable an examining board to decide with certainty, in a given case, whether or not a sterilization is indicated. On the other hand, an opportunity should be afforded a physician to perform sterilization with impunity if certain preconditions of a social nature obtain and the person to be sterilized makes such a request. For example, it does

not appear reasonable to deny a physician the right to sterilize at her request a woman without adequate income who already has seven children that she cannot properly care for; yet, as the law now reads, he is subject to punishment if he complies with her request. The draft of a new general penal code has introduced here a good compromise: it provides that the person committing a bodily injury with the consent of the injured subject is amenable to punishment only in case the act contravenes good morals. If this provision is approved, sterilization with the consent of the person to be sterilized may be performed with impunity in all cases in which it appears reasonable and proper, as, for example, in the case just cited.

The Radiologic Treatment of Malignant Tumors

The treatment of pharyngeal carcinomas by operation and by irradiation with radium and roentgen rays has not been especially satisfactory. The aim of the new irradiation technic introduced by Coutard at the Radium Institute in Paris is to make the destruction of the tumor tissue as protracted as possible and to effect a continuous disturbance of cell division by dividing a large mass of irradiated energy into numerous single doses. Heavy filtration (0.5 mm. of copper) and the long distance of the tube (from 50 to 100 cm.) bring about a marked diminution of the wavelength and of the intensity. The total dosage is from twelve to twenty times that formerly regarded as admissible. A marked inflammation of the skin (reddening and exfoliation) and of mucous membranes (diphtheria-like coatings), developing in from ten to twelve days, retrogresses entirely after from two to three weeks. The results achieved with this treatment excel anything previously accomplished by roentgenotherapy. Coutard reported, in 1928, 26 per cent of recoveries in tonsillar carcinoma; Regaud, in 1930, 20 per cent of recoveries in carcinoma of the hypopharynx. Professor Baensch of Leipzig recently reported, before the Medizinische Gesellschaft of that city, similar favorable results. Baensch recommends combination with radium irradiation. The presence of regional metastases of the glands makes for much poorer results. Although the metastases are much reduced in size by the irradiation—they may even disappear—they return in a few weeks in an accentuated form. The Coutard method marks a distinct advance in the treatment of previously hopeless cases.

Albert Moll's Seventieth Birthday

Albert Moll, psychiatrist and psychologist of Berlin, whose name is known far beyond the limits of Germany, first became known to the general public through his unmasking of the medium Anna Rothe. The newpapers were carrying many accounts of her spiritistic séances. The participants at the séance were seated around a table, forming a complete circle by grasping one another's hands, so that apparently no one could rise unnoticed. In the darkened room, all sorts of hocus-pocus was then carried out; among other things, a ghostlike figure was seen to flit across the room. When the lights were turned on, everybody was sitting innocently about the table where they had been sitting when the room was darkened. Moll was so rude as to lift up the skirt of the medium, which created a sensation. Such conduct toward a lady was unseemly, but it exposed a white undergarment on which were fresh red splashes. Moll showed the audience how the trick was done and how the medium managed to withdraw unnoticed from the circle about the table. The body is contracted as much as possible, and then, slowly but steadily, the right hand of the left neighbor is drawn toward the left hand of the right neighbor. After the medium has strengthened and loosened her hand clasp several times, the audience, having its attention directed to the events occurring in the room, does not notice that the link in the chain has been broken, and that the medium has eliminated herself from the circle and has stopped the gap in the manner described; nor is the audience aware when she again slips back into the circle. When Moll slipped out of the chain, he waited until the white specter flitted past him, and then he injected the red contents of a syringe into the garment of the gliding specter, and, at the close of the séance, he showed the audience the red splashes on the skirt of the medium. Since then, Moll has served many times as expert in spiritistic and clairvoyant affairs, and in every case he succeeded in unraveling the deception by which the audience was being tricked. Further, Moll developed in Berlin a fruitful scientific and practical activity as a neurologist. He recognized the importance of psychotherapy and also the significance of the relations between sex impulse and psyche. His scientific experience in this field led him to conceptions that, in many respects, differ from the opinions of the psychoanalytic school. Especially well known are his publications on hypnotism, perverted sexual desire, libido sexualis, the sex life of the child, and the nervous woman.

Training of Diet Kitchen Personnel

As loose methods in the training of diet kitchen personnel have begun to be manifest, a number of diet kitchens giving instruction at German clinics and hospitals decided to establish a society, which already has thirteen collective members, including the diet kitchens of the medical clinics at Hamburg (Brauer), Kiel, Königsburg, Würzburg, Greifswald and Halle; in addition, the Stuttgarter Krankenanstalten, the Medizinische Akademie Düsseldorf, the Augusta-Hospital in Berlin, and others. These diet kitchens have adopted a uniform two-year course of study and training. The aim is to develop women directors of diet kitchens, who not only understand how to carry out a physician's prescriptions but can manage from the standpoint of economics and organization a diet kitchen independently. Especial value is attached to keeping in close touch with the hospital, the hospital organization, and the patient. Thus it is hoped that reliably trained persons will be placed at the disposal of the hospitals, the sanatoriums and the mineral spring resorts. It is planned to take into the society the diet kitchens in hospitals and clinics, which give no instruction. The organization will also promote in other directions the cause of dietetics, plans for which will have to remain in the background at present because of the economic stringency.

The Closing of the Surgical Clinic

Some months ago (THE JOURNAL, Nov. 28, 1931, p. 1640), mention was made of the fact that the Chirurgische Universitätsklinik (the so-called Bier clinic), famous by reason of its traditions and its past performances, would be closed, April 1, owing to the economic situation. Fortunately, fate has been more kind to this world-famous clinic than seemed likely, to judge from the public controversy over the question. At least the policlinic, with all its surgical specialties, has been preserved. For especially urgent and grave cases a small ward with a limited number of beds has been retained. Dr. Sauerbruch, the present occupant of the only chair of surgery at the University of Berlin, and director of the Chirurgische Klinik der Charité, has been placed in charge of the small clinic that is left. Prof. Dr. A. Israel, the clinical chief physician of Geheimrat Bier, has taken over the medical direction of the institute. Likewise, the third medical policlinic, under Professor Goldscheider, has been assigned quarters in the clinic. The eye clinic of Professor Krückmann has not been affected in the least by the new arrangements.

Vital Statistics for 1931

Regierungsrat Dornedden, of the federal bureau of health, calls attention, in the *Reichs-Gesundheitsblatt*, to the fact that living births for the year 1931 show a decrease of about 96,000 over 1930, in spite of the steady decreases of recent years. To each thousand women of child-bearing age there were, in 1913, 116.5 living births; in 1930, 67.2, and in 1931, 61.8, or only 53 per cent of the last prewar year value. According to statistics for the first quarter of 1932, the decline in the birth rate continues. In contrast with the previous years, the decline in births for 1931 was most marked in the communes with less than 15,000 inhabitants. In contradistinction to the decline in

the birth rate, the number of deaths in 1931 showed an increase of 15,000, notwithstanding the fact that the reduction in births led one to anticipate a decrease of about 8,650 deaths. The infant mortality for 1931 was 0.1 below that of 1930. In comparison with the prewar period, the infant mortality declined most in the third quarter and the least in the first quarter. This indicates that the typical summer diseases of infants have hitherto been combated with greater success than the winter diseases. The smaller decrease in the first quarter is only in part ascribable to the increased mortality resulting from epidemics. As to the chief causes of death in general, there are as yet no federal statistics for the year 1931. However, the Prussian statistics, which extend through the third quarter of 1931, give information on the more important causes of death, and especially on the increase of mortality in the first quarter of 1931, which was caused chiefly by the prevalence of influenza and disorders of the respiratory and circulatory organs. Aside from the increase in the number of cancer cases due to the greater average age of the population, the mortality figures for 1931 were not unfavorable. There was a marked decline in the mortality from acute infectious diseases, including childbed fever, diseases of the digestive tract, accidents and, to a slight extent, tuberculosis, whereas the suicide rate showed a slight increase.

BUDAPEST

(From Our Regular Correspondent)

May 31, 1932.

Sources of Error in Cancer Statistics

In a lecture given before the Medical Society by Dr. K. Wolff it was emphasized that the present method of preparing cancer statistics should be revised. The only reliable statistics are those founded on diagnoses established in vivo, at postmortems on histologic sections, and, finally, on the data afforded by compulsory death certificates. Unsupported clinical diagnoses of cancer, according to calculations, are erroneous in from 20 to 40 per cent of cases; therefore, exact statistics cannot be expected without histologic controls. The verdicts of coroners, some of whom are not physicians, are quite unreliable. Thus statistics which appear to prove the increase of cancer mortality may indicate only the development of the science of medical diagnosis; whereas cancer mortality rises in such statistics, the number of cases labeled senile marasmus, unknown disease and other indefinite diagnoses decreases. Nowadays, well trained physicians know that nobody dies solely from senile debility. If the patient had no other disease he would be certain to have myocardial degeneration or a bronchopneumonia. Postmortem statistics are also unreliable, because they reflect the conditions not of the whole population but of the hospital class. This objection holds true still more with regard to the statistics based on histologic material alone. The fewer the cases utilized in the compilation of cancer statistics, the less reliable the results are. In one hospital the leading surgeon may have a predilection for cancer cases; hence the cancer turnover is high. Another hospital hardly admits cancer patients, because its surgeons work on other lines; the number of cancer cases here will be low. Such sources of error can be eliminated by the collation of the material of many hospitals, when those which have large children's departments will serve to balance others dealing almost exclusively with cancer cases. Thus a fairly accurate picture of the conditions of population could be obtained, but only of the hospital class. The statistics heretofore published do not prove, in Dr. Wolff's opinion, the assumption that the rate of mortality from cancer shows a rising tendency. A relative rise is the obvious corollary of the fact that the number of deaths from other curable and preventable diseases is diminished. But this means only that no defense against cancer exists because of ignorance concerning its cause, its therapy and its prophylaxis. The average duration of life is increasing steadily all over the world. Cancer is the disease of elderly persons. If the average duration of man's life is increasing, there are more elderly persons—that is to say, more people reach the age at which cancer is apt to occur. It may well be that the number of cancer cases shows considerable increase with the rise of the average duration of life. In Dr. Wolff's opinion the apparent increase in the incidence of cancer has been too much emphasized. The mortality rate of every disease displays some oscillations if the statistical material available over several years is scrutinized. Wolff protests against the interpretation of what may be only natural oscillations as a progressive rise in incidence.

Dr. Ödön Zalka also expressed the opinion that the mortality statistics of cancer leave much to be desired. According to his observations the error in cases of gastric cancer is 31 per cent, in uterine cancer 7 per cent, in rectal cancer 19 per cent, and in esophageal cancer 130 per cent. The statistics collected by him show no progressive increase of cancer, its occurrence being fairly constant. For instance, between 1919 and 1923 among the necropsies in the Budapest University Clinics on patients over 20 years of age the cancer rate amounted to 12.52 per cent. Since in quite recent years a larger proportion of different sections of the population seek relief in hospitals and are subjected to routine postmortem examinations, he believes that the data provided by postmortem statistics today are nearer to reality, and more nearly representative of the truth, than the older statistics.

Rat Extermination in Yugoslavia

Following the example of Hungary, the Yugoslavian health authorities insist on holding a rat extermination week this year. They emphasize the need that exists for some safe and sure method of exterminating rats, which are, as is generally known, a common medium by which plague is introduced or spread. The ordinary methods of shooting, hunting by dogs, cats or ferrets, and catching in traps are not wholesale enough, while poisoning with arsenic, phosphorus, strychnine and barium is dangerous to other animals and may become a danger to human beings by reason of the poisoned rats dying and remaining under floor boards and afterward putrefying. Consequently, bacteriologists have suggested some form of disease that is slowly fatal to rats and other rodents, but harmless to other animals, being spread among the rats, which in their turn would continue to spread the disease by infection from one to the other. There are diseases that affect only animals of certain species, as for instance hog cholera and swine fever, and bacteriology has succeeded in furnishing germs that cause disease of the digestive tract in rats and other rodents, but apparently, so far as can be judged at present, not in other animals. These bacillary poisons or rather toxins vary somewhat, at least in name. Those that have been introduced abroad and spoken of more or less as affecting the purpose mentioned are ratin, rathite, Liverpool virus, rattentod (German) and ratomurin (Hungarian). The bacilli are cultivated on various mediums and mixed with food that rats eat. The effect of the bacillus or its toxin on the rat is to produce intestinal disease, spread through the feces to other rats through the medium of food. Reports as to success in practice of these bacillary or microbial poisons are contradictory, and the results vary, probably owing to the varying potency of the toxins used and the varying susceptibility of rats. Some rats may be immune, or may become so when fed with small quantities of a diluted culture or a culture of low toxicity.

Autohemotherapy in Cases of Late Syphilis

In a lecture given at the Budapest Royal Medical Society, Dr. Rajka spoke on the effect of light treatment and autohemotherapy on obstinate cases of late syphilis in which, despite treatment with the routine chemicals, the Wassermann reaction is persistently positive. His method, he said, was

to give a course of thirty irradiations and twenty injections of blood taken from the patient's own vein, half an hour after irradiation begins. The positive Wassermann reactions became negative in 57 per cent of the latent or symptomless cases and in 28 per cent of those in which there were signs of damage to the nervous system. The reaction has so far remained negative for periods of from two months to three years, becoming positive again in about a third of the cases. The subjective symptoms improved in every case (forty-one) of syphilis of the nervous and circulatory blood systems. The tests were begun two years ago and remissions have varied from one to nineteen months in length. There has been relapse in nine cases only, and of these four improved on a second course of treatment. The patients all felt better in general health, not only during but also after treatment. They slept and ate better, gained in weight, and became more vigorous. It is probable, the lecturer said, that occasional courses of treatment will stabilize this improved condition.

ITALY

(From Our Regular Correspondent)

May 31, 1932.

The Latin Otorhinolaryngologic Congress

The congress of the Società otorinolaringologica latina was held at Catania, under the chairmanship of S. Citelli, director of the Clinica otorinolaringoiatrica of the University of Catania. The first main topic on the program, "The Anatomy and Pathology of the Maxillary Sinus," was discussed by various Italian and foreign speakers. De Mendoça of Lisbon studied the various causes of maxillary sinusitis. The chronicity of the disease is often induced by the anomalous locations of the sinusal orifices. His experience has led the speaker to believe that in childhood maxillary sinusitis is more frequent than is commonly supposed, although in some cases of suspected sinusitis osteomyelitic factors may be involved. Aubin and Ardoin of Paris presented the results of histologic researches that they had carried out on the mucosa of the maxillary sinus in acute and chronic inflammations. They divide the acute forms into catarrhal, mucopurulent and gangrenous attacks, and the chronic forms into hyperplasic, atrophic, metaplasic and cholesteatomatous types. In addition to the histologic data pertaining to each of these forms, the speakers explained data that they had derived from histologic observations carried out on polypoid hyperplasias of the chronically inflamed mucous membrane of the maxillary sinus. Metzianu and Tempea of Bucharest spoke on the relations between ozena and the maxillary sinus. The speakers examined the maxillary sinus in nineteen ozena patients with the acid of modern semeiologic agents but found lesions of the sinus in only three cases.

Lasagna of Parma spoke on maxillary sinusitis in children, giving considerations on therapeutic management; more particularly, medical treatment (irrigations) and immunologic treatment (vaccinations). Surgical intervention is rarely necessary. Calicetti of Bologna dealt with the endocranial complications of inflammatory processes of the maxillary sinus, among the most frequent causes of which they recognized traumatisms (chiefly operative), osteomyelitis and involvement of the other sinuses in the infection. He studied the mode of diffusion of sinus infection to the cranial cavity and its clinical manifestations. Simeoni of Naples considered the maxillary sinus as the possible focus of general infection and explained the various complications (auricular, endocranial, bronchopulmonary, renal, and the like) to which an inflammatory process of the sinus may give rise, particularly if chronic and due to virulent microorganisms.

Bougeois of Paris spoke on the therapeutic indications in the course of maxillary sinusitis, considered as an isolated form. When the medical treatment is insufficient, it is necessary to have recourse to puncture followed by lavage, or possibly a radical operation, which he recommends performing with a wide opening of the sinus through the inferior meatus of the nose. In forms of dental origin he advises waiting a few days, after removing the tooth, before applying lavage of the various passages.

Carcò of Catania treated ten patients with maxillary sinusitis by means of vaccinotherapy and effected recoveries in all the acute and subacute cases and in two out of the four chronic cases. Vaccinotherapy was used to supplement surgical treatment.

Moulonguet and Doniol of Paris treated twelve cases of chronic maxillary sinusitis with the d'Herelle bacteriophage, securing thereby seven recoveries in a series of twelve cases. They conclude that in these morbid forms phagotherapy is a harmless anodyne method but that it does not seem to give better results than are obtainable by the ordinary methods. Pietrantoni of Brescia explained the advantages of crenotherapy, not only localized but general, in the treatment of sinusitis. Fallas of Brussels spoke on tuberculous sinusitis, a rare condition, for the most part secondary to specific lesions of adjacent organs, nasal or buccal. The speaker distinguished three clinical forms, hidden, osseous and tumoral, in each of which he set forth the symptomatology and the therapeutic indications. The method of choice is surgical intervention.

Gaillard of Lyons spoke on syphilis of the maxillary sinus, dealing especially with the pathogenesis. Tertiary lesions constitute nearly all the cases described in the literature. Citelli of Catania described the disease reported by him in 1918 and known by the term "Citelli's polypus." It consists in the prolapse of part of the mucosa of the maxillary sinus into the corresponding nasal fossa. The microscopic examination identifies the presence of the mucosa. A large proportion of the Killian polyps, if examined microscopically, would be recognized as Citelli polyps. Simple removal is generally sufficient.

Fairen of Saragossa spoke on malignant tumors of the maxillary sinus. In the general statistics of tumors, the maxillo-ethmoidal localization occurs with a frequency of 1.5 per cent. The speaker considered the various histologic forms, the clinical aspects, and the fundamental diagnostic factors. From the therapeutic point of view, he considers that a new phase of treatment may be represented by injections of serum of cancer patients, or of extracts of tumor tissues. Surgical treatment and treatment with roentgen rays and electrocoagulation rarely give good results.

The second topic, "Methods of Examining the Vestibule," was developed by Quix. The speaker criticized the methods at present employed, declaring them to be incomplete, since they are confined to the functional study of the canals. The examination of the patient in the rotatory chair has little value in otology. It is preferable to use the rotatory disk, which enables the examiner to test the reflexes of the semicircular canals with the rotation of variable velocity and the reflexes of the otoliths with a regular rotation produced by centrifugal action. In many cases it is possible to distinguish peripheral disorders from central disturbances by the form of the nystagmus. From the clinical point of view the deviations in the tests of the index have more value than the nystagmus.

Congress of Microbiology

The fourth congress organized by the Italian section of the Società internazionale di microbiologia will be held in Milan in November. The chief topics on the program are: (1) Microbic Dissociations, to be presented by Professor Petragnani of the University of Siena; (2) Local Immunity, with a paper by Professor Mariani, and (3) Micro-organisms of the Terrane and the Fixation of Atmospheric Nitrogen, to be considered by Prof. Gino De Rossi. Also the following subjects will be taken up: (1) Postvaccinal Encephalitis, by Professor Allaria, and (2) Blood Groups and the Physical Constitution, by Dr. Viola.

The Death of Prof. Baldo Rossi

The death of Prof. Baldo Rossi, senator and director of the Clinica chirurgica of the University of Milan, is announced. Born in 1868, he was graduated at the University of Pavia in 1893. Devoting himself to the study of pathologic anatomy, he spent a year in Munich, where he did research in bone fractures. On returning to Italy he became the director of a new department of traumatology and mechanotherapy in the Ospedale Maggiore at Milan, of which he became, in 1905, chief surgeon. Later he occupied the chair of traumatology in the Instituti clinici di perfezionamento in Milan and was manager of the journal *Clinica Chirurgica*. During the war he studied at the Franco-German front the organization of surgical services at the front. After the war, in collaboration with Mangiagalli, he helped to promote the organization of the University of Milan, and that having been founded, he created the new Clinica chirurgica, of which he was appointed director. In 1924 he was elected rector of the university. His numerous publications deal chiefly with traumatology but consider also general surgery, of which he was an ardent teacher.

The University City of Rome

By a recent order of the Consiglio dei ministri (ministerial cabinet) a special consortium comprising representatives of the government and of local organizations was established, to which will be entrusted the reorganization and further development of building plans for the University of Rome. The new buildings, which will include a students' dormitory, will be erected in the vicinity of the Policlinico. The cost of the extensive undertaking will be about 70,000,000 lire ($3,500,000). Building operations will extend over a period of three years.

SOUTH AFRICA

(From Our Regular Correspondent)

Cape Town, May 27, 1932.

Dental Caries in Native Children

Several investigators have been working at the problem of carious teeth in native children, but so far few of the results have been published. Recently Prof. Middleton Shaw of the Dental School of the Faculty of Medicine of the Witwatersrand University has published his conclusions based on the study of the available data. He states that the chief predisposing cause of caries at present is the bad diet of recent generations; there is no cause operating today which renders teeth more susceptible to bacteria; there is no difference or degenerative change in the microscopic structure of the teeth at present as compared with those of our ancestors thousands of years ago. These conclusions are in direct opposition to the views of the Mellanbys, who hold that carious teeth constitute an avitaminosis. The data collected from extensive investigations of native school children in this country show, however, that avitaminosis has little or no direct influence on the primary dentition, whatever it may have on the secondary set. Aboriginal native children, in general, have atrociously bad temporary teeth, while their permanent teeth, especially among the boys, are much better than those of European lads of the same age.

Country Practitioner a Great Paleontologist

Dr. Robert Broom, F.R.S., a country practitioner in the Albany district in the Cape province, is the foremost authority on the fossil mammals of the Karroo, and probably one of the recognized experts on the evolution of the mammals. His monograph on the Origin of the Mammalia has just been published under the auspices of the Carnegie Foundation and the Union Research Board. It is a large quarto work, dealing with the classification of the fossil genera which he has studied for more than thirty years. In the course of a busy country practice, Dr. Broom has found time to investigate the rich shale deposits of the Karroo, which contain, as he estimates, millions of well preserved mammalian skeletons, and he has described many genera and hundreds of new species. His scientific attainments are little known outside the ranks of paleontologists, for he is a quiet, reserved man. He has done much for science in South Africa. His new monograph is an achievement of which the profession in South Africa may well be proud.

The New Secretary of Public Health

Dr. J. A. Mitchell, who retires this month as secretary of public health and medical officer of health to the Union of South Africa, succeeded Dr. Arnold as medical officer of health for the union. When he took over the work there was no public health act and no consolidated medical act in the union, and his work consisted largely in supplying these two deficiencies. The present medical, dental and pharmacy act, which consolidates the four provincial acts relating to medical practice, was his conception, but it took many years before he could get it on the statute book. The public health act, passed some years previously, is an involved piece of legislation and is mixed up with housing; it can hardly be called a model act and in time it will probably be amended to meet the changed conditions of the country. Dr. Mitchell, who was especially interested in bacteriology and epidemiology, was regarded as a capable and conscientious official but was criticized because he did not allow his department to expand in proportion to the increasing health needs of the people. As a matter of fact, the expenditure on the housing and care of the mentally defective citizens has increased proportionately more quickly than that on public health in general. The late secretary of public health had a hard row to hoe, and of late years his bad health prevented him from insisting on progressive developments. He is succeeded by his second in command, Sir Edward Thornton, who has for many years acted as chief of the medical defense department. Sir Edward is a popular public health official, who has an intimate knowledge of the interrelations between the central government and the provincial administrations, and who, unlike his predecessor, has always taken a keen interest in professional politics and is a prominent member of the federal council of the medical association.

The Vacancy in the Medical Council

Three months ago Dr. W. Darley Hartley, emeritus editor of the medical journal and the oldest member of the South African Medical Council, which has jurisdiction over all registered medical practitioners in the union, resigned. At the last election he headed the poll. His place must be taken by a practitioner from his province, and the Medical Association unanimously recommended Dr. Moffat of Cape Town, who has now been elected without opposition. Dr. Moffat is a consulting surgeon, the senior in his specialty in the province, and a member of one of the best known English missionary families in the union. He has recently retired from active practice to devote part of his time to the medical council and the federal council of the association, of which he is a member.

The Annual Medical Congress

The twenty-sixth South African Medical Congress opens next month at East London under the presidency of Dr. Bruce Bays, one of the senior physicians in the eastern province of the cape. An attractive program has been arranged for all the sections, but the meeting is liable to be less well attended than the last two congresses, owing to the fact that many colleagues have left to attend the centenary meeting of the British association in London next month. East London is an attractive seaside resort. It is not far from the native territories and the interesting mission and educational center Fort Hare, which many regard as the future site of our first native medical school.

Marriages

GEORGE WILLIAM COOPER, Lieutenant, M. C., U. S. Navy, to Miss Helen Derbes of Houma, La., July 19.

ALAN PHARES PARKER, Philadelphia, to Miss Janet Johnson Reeve of Haddonfield, N. J., May 6.

SAMUEL SCHWIMMER, New York, to Miss Jean Langberg of Mount Vernon, N. Y., June 19.

ANTHONY BAGNUOLA, Chicago, to Miss Janice Emily Livingstone of Baltimore, April 11.

CHARLES L. YOUNGMAN to Miss Elizabeth M. Luppert, both of Williamsport, Pa., April 17.

JOHN F. WIXTED, Sterling, Ill., to DR. JULIA M. LUNDSTROM of Chicago, July 16.

BENJAMIN H. BATTOCK, Spivak, Colo., to Miss Bertha Chertoff of Denver, July 17.

JACOB SCHMUKLER to Miss May Dollinger, both of Newark, N. J., July 3.

JOHN J. SHAW to Miss Beatrice Vare, both of Philadelphia, July 13.

Deaths

Robert Emmett Farr ⊕ Minneapolis; Rush Medical College, Chicago, 1900; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, the Western Surgical Association and the Associated Anesthetists of the United States and Canada; fellow of the American College of Surgeons; author of "Practical Local Anesthesia and Its Surgical Technic"; aged 57; attending surgeon to St. Mary's Hospital, where he died, June 30, of shock, following extensive rhizotomy in hypertrophic arthritis of the spine with pressure on nerve roots.

Herman Von Wechlinger Schulte ⊕ Omaha; Columbia University College of Physicians and Surgeons, New York, 1902; member of the American Association of Anatomists; professor of anatomy since 1916, junior dean, 1916-1917, and since 1917 dean, Creighton University School of Medicine; formerly instructor of anatomy, assistant demonstrator, demonstrator, adjunct professor, assistant professor and associate professor at his alma mater; chief of staff of St. Joseph's Hospital; aged 55; died, July 13, of heart disease.

Alfred Johnson ⊕ Jamaica, N. Y.; L.R.C.P., London, and M.R.C.S., England, 1897; University of Durham College of Medicine, Newcastle-upon-Tyne, England, 1913; at one time lecturer in surgery, New York University Medical College; served during the World War; formerly on the staffs of the Flower Hospital, New York, and the Mary Immaculate Hospital, Jamaica; aged 60; died, June 27, of coronary arteriosclerosis and myocarditis.

Oliver Babcock Wait, Philadelphia; New York Homeopathic Medical College and Hospital, 1894; Hahnemann Medical College and Hospital of Philadelphia, 1910; associate professor of obstetrics, Hahnemann Medical College and Hospital of Philadelphia; veteran of the Spanish-American War; aged 60; died, June 30, of myocarditis.

Herman Victor Magnusson, Bell, Calif.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; member of the California Medical Association; aged 56; was electrocuted, July 2, by a roentgen ray machine with which he was giving a patient a treatment.

Aloysius J. Lennon ⊕ Joliet, Ill.; College of Physicians and Surgeons, Chicago, 1901; fellow of the American College of Surgeons; chief of the obstetric department, St. Joseph's Hospital, and surgeon to the Silver Cross Hospital; aged 54; died, July 7, of undulant fever.

Stephen S. Stack ⊕ Milwaukee; Rush Medical College, Chicago, 1883; member of the American Psychiatric Association; aged 72; for many years medical superintendent of the Sacred Heart Hospital, where he died, June 18, of arteriosclerosis and myocarditis.

William Marcy Hindman ⊕ Burlington Junction, Mo.; Chicago College of Medicine and Surgery, 1914; president of the Nodaway County Medical Society; on the staff of St. Francis Hospital, Maryville; aged 48; died, June 26, of a tumor of the lung.

Charles Hamlin Good, Huntington, Ind.; Rush Medical College, Chicago, 1883; member and past president of the Indiana State Medical Association; formerly on the staff of the Huntington County Hospital; aged 71; died, July 1, of heart disease.

Harry Leroy Whitney, Plymouth, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1884; member of the Medical Society of the State of Pennsylvania; past president of the Luzerne County Medical Society; aged 71; died, July 11.

William Joseph Sheehan ⊕ Boston; Tufts College Medical School, Boston, 1903; member of the New England Otological and Laryngological Society; aged 57; on the staff of the Carney Hospital, where he died, June 12, of acute nephritis and uremia.

Arthur Kenworthy Hoge ⊕ Wheeling, W. Va.; Jefferson Medical College of Philadelphia, 1914; fellow of the American College of Surgeons; ophthalmologist and otolaryngologist to the Ohio Valley General Hospital; aged 43; died suddenly, June 30.

Harlow V. Wilson, Champaign, Ill.; Medical Department of Washington University, St. Louis, 1903; member of the Illinois State Medical Society; aged 56; was killed, June 27, when his automobile, under which he was working, fell on his chest.

Maurice Thomas Scanlan, Boston; Tufts College Medical School, Boston, 1908; member of the Massachusetts Medical Society; surgeon for the city police department; aged 48; died suddenly, July 1, of heart disease.

George Edgar Hassinger, Middleburg, Pa.; Jefferson Medical College of Philadelphia, 1881; formerly postmaster of Middleburg and member of the board of education; aged 74; died, June 12, of uremia.

Francis Arista Shoaf, Kokomo, Ind.; Medical College of Indiana, Indianapolis, 1882; past president of the Howard County Medical Society; aged 76; died, June 27, at Rochester, of chronic nephritis.

Edwin Ellsworth Higgins, Brooklyn; Long Island College Hospital, Brooklyn, 1886; on the staffs of the Cumberland and Brooklyn Eye and Ear hospitals; aged 70; died, June 19, of heart disease.

Noah B. Chipman, Falmouth, Ky.; Cincinnati College of Medicine and Surgery, 1876; formerly member of the state legislature and state senator; aged 79; died, June 26, of angina pectoris.

Cyrus Decker Lloyd, Leavenworth, Kan.; Tufts College Medical School, Boston, 1898; member of the Kansas Medical Society; aged 62; died, June 26, of cerebral hemorrhage.

Clarence F. Schiltz ⊕ American Falls, Idaho; Ohio Medical University, Columbus, 1900; aged 55; died, June 24, of complications, following an operation for appendicitis.

Herbert Victor Louis Sapper, Oklahoma City; University of Illinois College of Medicine, Chicago, 1917; aged 44; died, June 3, of cerebral hemorrhage and heart disease.

Vernon Dee Brigham, Robinson, Ill.; University of Cincinnati College of Medicine, 1920; aged 39; died, May 17, at Elk City, Okla., of poison, self-administered.

Horace Miller Edmonds, Tonawanda, N. Y.; Bellevue Hospital Medical College, New York, 1885; aged 74; died, June 4, of myocarditis and arteriosclerosis.

J. Amedee Demers, Sherbrooke, Que., Canada; School of Medicine and Surgery of Montreal, 1917; aged 40; died, June 23, of essential hypertension and uremia.

Marks H. Hillyard, Quincy, Mich.; Eclectic Medical College of Pennsylvania, Philadelphia, 1879; Civil War veteran; aged 91; died, May 27, of pneumonia.

Maurice Heppner ⊕ San Francisco; College of Physicians and Surgeons of San Francisco, 1916; aged 38; died, May 22, of heart disease.

Victory Augusta Derrick, Oakland, Calif.; College of Physicians and Surgeons of San Francisco, 1898; aged 59; died, May 31.

Harold Morse Whiteway ⊕ Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1899; aged 66; died, June 6.

Ephraim Rinehart, Frankfort, Ind.; American Medical College, Indianapolis, 1897; aged 72; died, in May, of heart disease.

Mabel Pearl Russell, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1922; aged 35; died, June 6.

Bureau of Investigation

KOREMLU

The Life History of a Viciously Dangerous Depilatory

A depilatory sold under the name of "Koremlu Cream," marketed first under the trade name Kora M. Lublin but later under the trade style Koremlu, Inc., was dealt with at some length in this department of THE JOURNAL, Feb. 21, 1931.

It was brought out in this article that Koremlu contained over 7 per cent of thallium acetate, a virulent poison, and yet was being advertised as harmless and "beneficial to the skin." In the original article, the Bureau of Investigation reported some cases of serious poisoning following the use of Koremlu. Subsequent to the publication of the original article, there appeared in THE JOURNAL clinical reports of many other cases of poisoning. Briefly, to recapitulate, the following cases of poisoning (arranged chronologically) alleged to have followed the use of Koremlu have been brought to the attention of THE JOURNAL:

1.—*Dr. Milton Sherry*, Baltimore: Reported on Nov. 4, 1930, the case of a patient acutely ill following the use of Koremlu. (Briefly referred to in JOURNAL article, Feb. 21, 1931.)

2.—*Dr. John Lansbury*, Rochester, Minn.: Reported in the *Proceedings of the Staff Meetings of the Mayo Clinic*, Nov. 12, 1930, a case of thallium poisoning following the use of Koremlu. (Referred to in original JOURNAL article.)

3.—*Dr. Henry B. Potter*, Wakefield, R. I.: Reported on Dec. 5, 1930, the case of a woman suffering from general alopecia following the use of Koremlu. (Referred to in JOURNAL's original article.)

4.—*Dr. C. J. Noonan*, Brooklyn: Reported on Dec. 15, 1930, a case of severe multiple neuritis in patient who had used Koremlu. (Referred to in original JOURNAL article.)

5.—*Miss Emma K. McCormick*, Westmoreland Hospital Association, Greensburg, Pa.: Reported Dec. 20, 1930, two cases in her own sisters, both of whom had used Koremlu. (Referred to in original JOURNAL article.)

6.—*Dr. George H. Van Gaasbeek*, Springfield, Mass.: Reported Jan. 27, 1931, the case of a woman who suffered "the agonies of the damned" with muscle atrophy of both legs following the use of Koremlu.

7.—*Dr. John Lansbury*, Rochester, Minn.: Reported Feb. 28, 1931, another case of severe poisoning following the use of Koremlu Cream. Also reported another case of a sister of the patient just mentioned, who also used Koremlu.

8.—*Dr. C. Guy Lane*, Boston: Reported March 10, 1931, a case of marked multiple neuritis following the use of Koremlu in the medical service of *Dr. Chester Jones* at the Massachusetts General Hospital.

9.—*Dr. Sigmund S. Greenbaum*, Philadelphia: Reported on April 14, 1931, a case of marked alopecia of the scalp with hypertrichosis persisting on the upper lip and cheek of a woman who had used Koremlu. (Briefly reported in THE JOURNAL, May 30, 1931.)

10.—*Dr. J. Frank Schamberg*, Philadelphia: Reported on April 14, 1931, a case of multiple neuritis and general weakness, together with alopecia of the scalp, following the use of Koremlu. (Briefly reported in THE JOURNAL, May 30, 1931.)

11.—*Messrs. West and Eckhardt*, attorneys, Chicago: Reported on April 25, 1931, that they had a client who had became seriously ill after using Koremlu.

12.—*Better Business Bureau* of Rochester, N. Y.: Reported May 6, 1931, the case of a Rochester school teacher who developed severe neuritis following the use of Koremlu.

13.—*Messrs. Mackenzie, Smith, Michell and Bruce*, attorneys, Syracuse, N. Y.: Reported on May 19, 1931, that they had a client who had been severely poisoned with thallium following the use of Koremlu.

14.—*Dr. Victor H. Bassett*, Health Officer of Georgia: Reported June 29, 1931, two cases of thallium poisoning following the use of Koremlu.

15.—*Dr. Charles L. Short*, Boston: Reported a case of severe poisoning following the use of Koremlu. (Case published in THE JOURNAL, July 11, 1931.)

16.—*Dr. William E. Lower*, Cleveland: Reported on June 23, 1931, that he and his associates were preparing detailed reports on three cases of thallium poisoning following the use of Koremlu.

17. *Dr. Allen N. Safier*, McKeesport, Pa.: Reported on July 11, 1931, a case of thallium poisoning following the use of Koremlu.

18.—*Times-Press*, Akron, Ohio: Reported in its issue of July 14, 1931, that Mrs. Ernest E. Leonard had filed suit for $150,000 against a local department store because of thallium poisoning following the use of Koremlu.

19.—*Mr. James F. Twohy*, attorney, Brooklyn: Reported Aug. 27, 1931, that he had a young woman as a client who had become practically blind following the use of Koremlu.

20.—*Dr. Thomas P. Waring*, Savannah, Ga.: Reported a case of thallium poisoning following the use of Koremlu. (Published in THE JOURNAL, Sept. 5, 1931.)

21.—*Messrs. Raines and Raines*, attorneys, Rochester, N. Y.: Reported on Nov. 25, 1931, that they had a client who had been poisoned by thallium contained in Koremlu.

22.—*Dr. Robert P. Kennedy*, Rochester, N. Y.: Reported on Nov. 27, 1931, a case of severe peripheral neuritis and some mental changes following the use of Koremlu.

23.—*Mr. Harold T. Meek*, attorney, St. Louis: Reported on Dec. 1, 1931, that he had a client who had been poisoned by Koremlu.

24.—*Messrs. Mackenzie, Smith, Michell and Bruce*, attorneys, Syracuse, N. Y.: Reported on Dec. 3, 1931, that in addition to the previous case of Koremlu poisoning, they were attorneys for another client who was still unable to walk normally following the use of Koremlu.

25.—*Dr. F. M. Stanton*, Columbus, Ohio: Reported on Jan. 2, 1932, the case of a 26-year-old woman suffering extreme pain in arms and legs following the continued use of Koremlu.

26.—*Dr. Harold K. Harris*, Columbus, Ohio: Reported on Jan. 10, 1932, a severe case of peripheral neuritis following the use of Koremlu.

27.—*Dr. William Mahoney*, Boston: Reported three cases of retrobulbar neuritis due to thallium poisoning following the use of Koremlu. (Published in THE JOURNAL, Feb. 20, 1932.)

28.—*Mr. Victor E. Tice*, attorney, Bethlehem, Pa.: Reported Feb. 29, 1932, that a woman client was about to bring suit for injuries believed to have been caused by the use of Koremlu.

29.—*Mr. Alvin T. Sapinsley*, attorney, New York City: Reported March 4, 1932, that he had brought action in behalf of a client against Koremlu, as a result of injuries sustained by using the product.

30.—*Drs. Walter I. Lillie and Harry L. Parker*, Rochester, Minn.: Reported two cases of retrobulbar neuritis due to thallium poisoning following the use of Koremlu. (Published in THE JOURNAL, April 16, 1932.)

31.—*Drs. W. S. Duncan and E. H. Crosby*, Cleveland: Reported in THE JOURNAL, May 30, 1931, a case of thallium poisoning following the use of Koremlu.

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UGLY HAIRS
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A Written Guarantee assures the permanent removal of unwanted hair
THOUSANDS of women both here and abroad now know the joy of an alluringly smooth and beautiful skin, forever free from the regrowth of ugly unfeminine hair. The Koremlu Cream Method—the achievement of a noted French scientist—not only removes the hair for all time, but actually is most beneficial to the skin itself.
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that merely burn off the hair and make it grow back coarser. Nor is it to be confused with any other method. The Koremlu Method is a permanent cure. It removes the hairs by weakening the follicles that hold the hairs in the roots, so that they are most easily lifted out. A number of applications definitely destroys the growth of hair. The Koremlu Cream Method, used regularly for a specific period as directed, is guaranteed by a signed, money-back guarantee to achieve the permanent results you have always hoped for—the complete and lasting removal of superfluous hair.
Rejoice that you can now be forever rid of all unwanted hair. Send the coupon today for our booklet containing full details of the Koremlu Cream Method.
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New York, N. Y.

Reproduction (greatly reduced) of a column advertisement of Koremlu appearing in *Vogue*, Feb. 1, 1931.

Following the publication of THE JOURNAL's original article, the Bureau of Investigation received letters from physicians who had been consulted by department stores concerning the marketing of Koremlu. These physicians reported that the Koremlu concern, in order to back up its claims for the alleged harmlessness of its product, were sending to such department stores a letter stating that Koremlu Cream had been "investigated, analyzed and tested by two of the foremost specialists in this line of work, Dr. Pease of the Pease Institute of New York, and Dr. Wimmer of Columbia University, New York."

That Dr. Herbert D. Pease of the Pease Laboratories should furnish a favorable report for this product, may not surprise those who have followed the reports from the Pease Laboratories for other nostrums whose manufacturers were desirous of investing their products with an air of respectability.

That Dr. Curt P. Wimmer, professor and associate dean of the College of Pharmacy of Columbia University, should have

given aid and comfort to the enemies of public health is more surprising. Yet it appears that Dr. Wimmer wrote to Koremlu, Inc., under date of Feb. 21, 1931—the same date as that on which the Bureau of Investigation published its article on Koremlu. In this letter to the Koremlu concern it was stated that Dr. Wimmer had made an extensive study *of the literature* [Italics ours.—Ed.] on thallium acetate; that the study revealed that thallium acetate was widely and extensively used internally for depilation in cases of ringworm; that the literature on the external application of the salt failed to reveal any cases of toxicity resulting from its use. The letter stated, also, that there was no evidence that thallium acetate could penetrate the skin and enter the blood stream or cause toxic disturbances by absorption. He added that he had applied the cream to himself in one-gram portions for a period of ten days and had not noted any effect. In view of this, he came to the conclusion that there was no danger of toxic effect in the use of Koremlu.

Dr. Wimmer's "intensive study of the literature" was not intensive enough. Dr. Sabouraud of Paris, who has done more with thallium acetate ointments than any man living, reported in *La Clinique*, Feb. 16, 1912 (twenty years ago) that such ointments were extremely toxic even when used under medical supervision. The *Pharmaceutical Journal and Pharmacist* of June 12, 1922, published an extensive abstract of Sabouraud's article. The *British Medical Journal*, March 26, 1927, reported, editorially:

"Thallium rubbed into the skin with oil or alcohol is readily absorbed, but exerts no action on the skin until after absorption; it has no local action."

In October, 1929, Sabouraud published an important article in *La Clinique* on the "Danger of Thallium Acetate Pomades in Hypertrichosis." In it he pointed out that he had used such ointments in his practice for twenty years and by exercising the greatest care in its administration and never using at one time an amount greater than that "of a very small pea," he had been able to avoid accidents. But he added that the use of such ointments had become common and with such use there had followed the inevitable serious accidents. It is of interest to note that Sabouraud's ointment, applied in quantities about the size of a pea and under his direction, contained only 1 per cent thallium acetate; Koremlu, sold indiscriminately to the public, contained in excess of 7 per cent and was to be used *ad lib.*

Dr. Wimmer also apparently overlooked the article by Dr. E. William Abramowitz that appeared in the *New York State Journal of Medicine*, March 1, 1929, in which the author stated that Sabouraud had abandoned the thallium preparation "on account of the toxicity of the drug"; and the article "Pharmacologic and Toxicologic Aspects of Thallium," published by Dr. M. J. Ormerod in the *Canadian Medical Association Journal*, December, 1928, in which attention also was called to Sabouraud's abandonment of the use of thallium because of its toxicity.

The most noticeable thing about Dr. Wimmer's letter, however, was a postscript or addition at the bottom of the letter, reading:

"It is distinctly understood that the above letter and opinion contained therein are not to be used for publication or advertising purposes in any manner whatever."

Yet, as a matter of fact, copies of the Wimmer letter, in its entirety, were used as levers to get department stores that were questioning the wisdom of selling Koremlu to continue to handle it.

The New York City Department of Health was in a peculiarly favorable position to protect the citizens of the largest city in the country by prohibiting the sale of Koremlu Cream. It appears, however, that the reports of Pease and Wimmer, and possibly others, were too strong for the Department. At any rate, the Koremlu people, under date of May 1, 1931, in a letter to a department store, quoted the clean bill that had been given their product by Drs. Pease and Wimmer, and then added:

"This information is concurred in by our consulting chemist, Dr. Sattler, professor of chemistry at Brooklyn College . . . On March 31 the Board of Health of the City of New York passed Koremlu Cream as a harmless cosmetic."

It might be added that the Bureau of Investigation has received and answered hundreds of letters of inquiry regarding the use of Koremlu. These inquiries have come from women who were using or were thinking of using the stuff; they have come from physicians whose patients were using it, from attorneys whose clients had been poisoned by it, from department stores that were selling it, from Better Business Bureaus, etc. In all of those instances, the Bureau of Investigation stressed the belief, based upon indisputable facts, that Koremlu Cream was a viciously dangerous preparation and had no place as a cosmetic, even if a warning had accompanied the sale of it. As a matter of fact, not only has no warning accompanied its sale, but it has been specifically and directly advertised as harmless.

Now comes the sequel: The Chicago *Tribune* of Sunday, July 17, 1932, carries the following item:

Lists Liabilities as Millions; Assets Now at Only $2.93

NEW YORK, July 16.—[Special]—A voluntary petition in bankruptcy was filed by Koremlu, Inc., depilatories, of 11 West 42d street, today, listing liabilities at $2,448,745 and assets at $2.93. Liabilities in large part consisted of damage suits pending in the courts. The largest amounts asked, $150,000 in each case, are demanded by Virginia Leonard and Ernest E. Leonard, whose addresses were not given. Another claimant, Irene Freidberg, is suing for $100,000. Other amounts demanded range down to a few hundred dollars.

From this, it appears that Koremlu, as such, is nearly out of the picture. There seems to be accumulating evidence, however, that the individuals, or at least some of the individuals, who have been connected with the exploitation of Koremlu as a depilatory have decided that there is too much money to be made in the depilatory business to abandon it, even if dozens of women have been injured by their old product. There is now appearing on the market an alleged depilatory called "Croxon." It emanates from the same office as that of Koremlu. Croxon, Inc., was brought into existence January 29, this year, with an authorized capital of 2,000 shares of common stock at no par value. The president of the concern is said to be one A. W. Lublin. Croxon, according to an advertisement in the July, 1932, issue of *McCall's Magazine*, "will permanently destroy both hair and roots in three to six months."

Even though we are not yet in a position to publish the complete ingredients of Croxon, it can be said unequivocally that Croxon will not destroy both hair and roots, either in three months or three years. Of course, if the Croxon concern can get impressionable women to use this stuff for a period of half a year at $5 and $10 a jar, they will, at the end of that time, have made considerable money.

In connection with the exploitation of Croxon, a letter received from the National Better Business Bureau states that Helene Lemberger, Ph.D., of the Department of Biochemistry of the New York Post-Graduate Medical School and Hospital, has given the Croxon concern a certificate to the effect that Croxon contains no compounds that are toxic when applied as directed, that it removes superfluous hair when applied as directed, and that it prevents the regrowth of the hair when applied over a period of one year. Dr. Lemberger also has a postscript or addendum to her certificate, to the effect:

"It is my understanding that neither this letter, my name, nor the name of this institution will be used in advertising."

Food Allergy.—Hypersensitiveness to the proteins of certain kinds of food is more common than is generally realized and may show itself by various forms of reaction. The appearance of an urticarial rash, and occasionally vomiting and diarrhea, in some people, following the ingestion of shell-fish (for example, oysters) has been recognized for a long time. But proteins from many other foods may produce allergic reactions in susceptible individuals, and, moreover, it would appear that the exciting agent need not necessarily be a protein, but that nonnitrogenous substances may possibly be responsible in some cases.—Kennedy, A. M.: A Note on Food Allergy, *Brit. M. J.* **1:1167 (June 25) 1932.**

Correspondence

TOXICITY OF TRICHLOROETHYLENE

Promotional activities, seeking the extension of industrial uses of trichloroethylene, frequently fail to disclose the toxic nature of this chemical and the practical dangers that may attend its use. Trichloroethylene (C_2HCl_3) is a chlorinated hydrocarbon, similar in qualities to chloroform, carbon tetrachloride, and ethylene dichloride. It is recommended for use as a dry cleaning agent, as a cleanser of metal parts, as a fumigant, as a solvent for insecticides, as a general degreasing agent, and as a solvent for many oils, fats, greases, gums, tars, waxes and rubber. The product has been standardized.

Basically, the deleterious action of trichloroethylene is like that of carbon tetrachloride. It is customary to rate trichloroethylene as having a toxicity of 1.7 when that for carbon tetrachloride is arbitrarily fixed at 1.0. From personal experience with animals (rabbits) the toxicity of the two substances is regarded as almost equal, both in the degree of severity and in the nature of the harm produced. In industry, trichloroethylene may enter the body through the breathing of vapors or through the skin. If the concentration is great (such as 10,000 parts of the vapor or more per million of air), manifestations center about the narcotic action of trichloroethylene. Sustained exposure to such high amounts is unusual. After the threshold of danger has been reached, the extent of damage in a measure depends on the concentration and the length of exposure time. The mildest degree may be represented by moderate respiratory irritation, nausea, headache and vomiting. Severer involvement may be characterized by pronounced bronchitis, diffuse hemorrhage into pulmonary tissues, pneumonia and enteritis. At this stage there may arise an acute splenitis, nephritis or hepatitis. Delayed poisoning may arise as late as sixty hours after initial exposure. This fulminating type is the result of acute degeneration of the liver similar to delayed chloroform poisoning. In connection with this process, guanidine may be formed in the liver or pass the liver barrier. Guanidine poisoning or a condition akin to that state dominates the clinical state.

In rabbits, the threshold of harm after inhalation has been found by me to lie below 500 parts per million of air. As one liquid cubic centimeter of trichloroethylene yields, on evaporation under room condition, some 271 cc. of vapor, this danger is readily attained under conditions of trivial exposure. Briefly, the results obtained from the inhalation of trichloroethylene vapors are:

20,000 parts per million produced death within 2 hours
10,000 parts per million produced death within 2½ hours
5,000 parts per million produced death within 14 to 28 hours
1,000 parts per million produced death within 28 to 41 hours
500 parts per million produced death within 19 days in one animal. Another animal was given 500 parts per million seven hours a day for twenty-four days. Desperate illness was produced. This animal was killed for autopsy.

The threshold of danger from skin absorption may not readily be determined, owing to the local skin damage produced when applications are kept in place for several days or weeks. However, it has been determined from experiments that:

7.7 cc. per kilogram 3 times daily on skin produced death within 4 days
6.6 cc. per kilogram 3 times daily on skin produced death within 5 days
3.8 cc. per kilogram 3 times daily on skin produced death within 5 days
3.6 cc. per kilogram 3 times daily on skin did not cause death within 14 days
Animal was very ill. Was killed for autopsy
1.2 cc. per kilogram 3 times daily did not cause death within 7 days
Animal was, however, made ill. Was killed for autopsy.

Any manufacturer contemplating the use of trichloroethylene may find in it many desirable qualities. Too, in the absence of closed systems of operation, he may find in this solvent the source of disaster for exposed workmen.

CAREY P. MCCORD, M.D., Cincinnati.

BOOKS ON THE HUMAN VOICE

To the Editor:—I have read the review of Dr. Leon Felderman's book on "The Human Voice" in THE JOURNAL, June 25. The inference is drawn that your reviewer is not familiar with the literature on this important subject, for he says: "While the vocalist will find much of interest and value in this volume, its real significance lies in the initiation of a unique and valuable subject for book making."

There have been many books on this subject published both here and abroad over a period of years, the best and most important of which is Sir Morell Mackenzie's "Hygiene of the Vocal Organs." Sir Morell wrote his excellent volume at a time when laryngology was still young, and yet it would be very difficult to improve on it even at this date. It is scholarly, comprehensive and absorbingly interesting from cover to cover.

In Germany there have been many writers on the singing problem and on every aspect of voice. Among them are Imhofer, Flatau and Moritz Schmidt. In America, excellent works have come from the hands of the late Dr. Holbrook Curtis and the late Dr. Frank E. Miller. Other voice physicians have written and published monographs on the subject.

If your reviewer will be good enough to turn to the index, he will find a modest volume entitled "Hygiene of the Voice," by Irving Wilson Voorhees, M.D., which came from the press of the Macmillan Company in 1923. This book is still alive in spite of its ten years, which is, I suppose, a hoary age as modern books come tumbling from the printery.

I. W. VOORHEES, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STUDY OF STERILITY

To the Editor:—I have a patient under my care, a woman, aged 30, married three years, who has had two miscarriages, one at 2½ months and the other at 5½ months. Both husband and wife are in good physical condition. Her basal metabolism is minus 10. Her menstrual period is always associated with dysmenorrhea, nervousness and vertical headaches. She has bled slightly every two weeks for the last six months. Since her last miscarriage, about a year ago, she has not become pregnant. I have put her on thyroid ovarian substance and Hormotone tablets. Neither seems to have any effect on her condition. There is no venereal history. Kindly tell me what seems to be wrong with the patient and how can I make pregnancy possible for her, as she wants a baby badly. Kindly omit name. M.D., Chicago.

ANSWER.—Even though the patient has been pregnant twice, it is advisable to make a careful examination of the husband's spermatozoa. This should include not only detection of their motility but also an approximation of their number, an analysis of the relative proportion of abnormal spermatozoa, and a search for leukocytes and other abnormalities in the semen. The male is responsible not only for a large proportion of sterile marriages but also for a fair number of miscarriages. Unfortunately, no way of determining which sperm are incapable of producing normal, full-term offspring is available.

If the examination of the semen proves it to be satisfactory, a careful bimanual examination of the patient should be made to determine the condition of the generative tract. The cervix should be inspected through a speculum to see whether a so-called erosion or other abnormality is present. Cervical disease is frequently responsible for infertility. If an "erosion" is present, it may quickly and satisfactorily be treated by means of the nasal tip electrical cautery. If any other anomaly in the genitalia is found, an effort should be made to correct it. If the pelvic organs, including the cervix, are apparently normal, a Rubin test should be performed to determine whether or not the tubes are patent. Even though the patient has been pregnant twice, there may have been an infection after the second miscarriage which resulted in closure of the tubes.

Drugs are seldom effective. A basal metabolism rate of minus 10 is usually not abnormal. Empirically the administration of thyroid or of compound solution of iodine U. S. P. (Lugol's solution) is worth while because occasionally these help, especially in cases in which women have low metabolic

rates. Hormotone and other similar substances rarely yield satisfactory results. Ovarian preparations are useless for these cases. The recurrence of bleeding every two weeks is abnormal. Menstruation is controlled by the glands of internal secretion, principally the pituitary. The latter acts on the endometrium, usually through the ovaries. The logical way to control menstruation would be to administer a substance that would regulate the pituitary gland. Thus far no specific way of doing this has been found, except perhaps by treatment with roentgen rays, but this form of therapy must be used with great care. Large doses of extract of the anterior lobe of the pituitary may be tried, but not much can be promised. The 1931 edition of New and Nonofficial Remedies, page 309, states that oral administration has not been found of value. Occasionally a dilation and curettement not only leads to pregnancy but also helps regulate the menstrual flow. However, this should not be performed until it is certain that the husband's spermatozoa are normal, the cervix is healthy, the tubes are patent and no abnormalities are present.

PERIARTHRITIS OF THE SHOULDER

To the Editor:—In a case of periarthritis of the shoulder with definite limitation of motion at the extremes of the ranges, the cause of the periarthritis is presumably a tear in the subscapularis, and of the limitation of motion, adhesions. Would a roentgen study of the diseased shoulder as compared with the normal reveal diminution or increase in the distance between the circumference of the head of the humerus and the circumference of the glenoid cavity, or a rotation of the upper end of the humerus, so that the intertubercular groove, for example, faces differently than the normal? Is there a method of measuring the rotations of the scapula?

ISAAC MERLIS, M.D., Boston.

ANSWER.—The term periarthritis of the shoulder is one that has been used loosely to describe a variety of signs, symptoms and pathologic conditions, including subdeltoid bursitis or subacromial bursitis, calcium deposits in the supraspinatus and infraspinatus tendons, sprain or tear of the capsule of the shoulder joint, subcoracoid bursitis, biceps tendovaginitis, traumatic periostitis, deltoid myositis and arthritis, adhesions around the joint, and tendonitis.

The correspondent evidently means a tear in the supraspinatus rather than the subscapularis. The limitation of motion is probably due to adhesions in and around the joint.

A roentgen study of the affected shoulder when compared with the normal may or may not reveal a diminution or increase in the joint space. The position of the intertubercular groove in the roentgenogram depends on the position in which the limb is placed when the film is made.

In answer to the second question, there is a method of measuring rotation of the scapula, but it is not accurate and not of great practical importance. By inspection and palpation, the rotation of the shoulder can be determined by moving the humerus. This should be compared with the other side, if it is normal.

Steindler's sign in arthritis of the shoulder is the obliquity of the vertebral border of the scapula. Dawbarn's sign is present when the spot of tenderness just below the acromion disappears when the shoulder is abducted, because the greater tuberosity disappears under the acromion during this act. The reader is referred to the writings of Codman, Brickner and Cleveland.

Roentgenograms should always be made so that the normal side, if there is one, can be compared with the affected side. Stereoscopic films are often found to offer additional information.

In an examination of the roentgenograms in 347 patients who complained of pain in the region of the shoulder joint, Brailsford found that 50 per cent showed no abnormality in the roentgenogram.

King and Holmes advised both underexposed and normal films be taken with the arm in external rotation. Dunn believes that one of the most important points is whether the patient can lie with comfort on the shoulder. If he can, the condition is probably not inflammatory. If it is not inflammatory, all the joint movements are free. There might be adhesions or there might be inflammation. Negative roentgenograms are of little diagnostic value in arthritis.

The correspondent did not state whether this is of traumatic or inflammatory etiology.

In a review of roentgenograms of 450 shoulders, King and Holmes found that the roentgen ray has missed and will continue to miss most of the cases of shoulder arthritis.

Periarthritis of the shoulder is a term used to describe the various conditions that occur just outside the shoulder joint, which by secondary involvement or effect cause limitation of the shoulder joint and pain in it. It is a term that is used indefinitely, and when the entire subject is studied more in detail, fewer conditions will be classed this way.

Myositis, fibrositis, capsulitis and tendonitis are usually diagnosed as periarthritis.

The following references may be consulted:

King, J. M., and Holmes, G. W.: *Am. J. Roentgenol.* **17**: 214 (Feb.) 1927.
Cleveland, M.: *Am. J. Surg.* **8**: 793 (April) 1930.
Brickner, W. M.: *Am. J. Surg.* **38**: 154 (June) 1924.
King, J. M., Jr., and Holmes, G. W.: The Diagnosis and Treatment of Four Hundred and Fifty Painful Shoulders, THE JOURNAL, Dec. 3, 1927, p. 1956.
Lovett, R. W.: *Surg., Gynec. & Obst.* **34**: 437 (April) 1922.
Codman, E. A.: *Boston M. & S. J.*, a series of articles during the past fifteen years.
Codman, E. A., and Akerson, I. B.: *Ann. Surg.* **93**: 348 (Jan.) 1931.
Wilson, P. D.: Complete Rupture of the Supraspinatus Tendon, THE JOURNAL, Feb. 7, 1931, p. 433.

DESTRUCTION OF PARASITES IN SEPTIC TANK

To the Editor:—The septic tank acts well as a means for installing a house toilet for some country homes. The odor is controlled and the waste appears as clear water. Does this arrangement prove safe for school purposes in destroying eggs of intestinal parasites and disease germs?

WILLIAM EHRHARDT, M.D., Fairbanks, Texas

ANSWER.—There is reason to believe that pathogenic bacteria never multiply in septic tanks but die out more or less speedily, probably within a few days. The eggs of helminths probably survive longer, but they too eventually disappear. The uncertainty as to absolute time relations makes it desirable to chlorinate any affluent entering or liable to enter wells, ponds or rivers used for drinking water. If water contamination can be ruled out and if access of flies to tank and effluent can be prevented, there seems little likelihood that septic tanks can be the agent of disease transmission.

INJURY TO WORKER WITH ELECTRIC WELDING ARC

To the Editor:—A welder, aged 28, was welding flues in a boiler overhead. The electric welding arc broke from the flue and hit his shield (a fabric shield with a window of black glass in a steel frame). The arc broke the glass and struck the right side of his nose. He was momentarily stunned but did not become unconscious. He felt as if struck with a baseball bat at the junction of the occiput and spine. Generalized pain of the entire head and shoulder followed; also stiffness in the cervical spine and muscles. He could not move his head from side to side or backward. Roentgen examination revealed no evidence of fracture or dislocation. He was treated with physical therapy without relief from the stiffness. He returned to work three months after the accident. At present, eight months after the accident, he complains of recurring pain at the base of the skull and frontal region. At times there is a tingling and a sensation of "needles and pins" in the right leg, especially when resting quietly. There is marked limitation of motion to the movements of the head, especially laterally and back. There is some localized tenderness along the cervical and upper thoracic spine and there is a sore spot at the base of the skull at the junction of the spine. The left shoulder shows some limitation of upward movement. Otherwise, physical examination is negative. What is the possible underlying pathologic condition and what is the prognosis in this case? Can you suggest treatment? I would appreciate if possible to hear from you directly before expiration of the week as I am preparing to testify in behalf of the injured man next week. Can you refer me to any literature dealing with injuries resulting from electricity? Kindly omit name.

M.D., Missouri.

ANSWER.—The language of this query implies, through its reference to a suspected fracture, that in this accident traumatic as well as electrical damage may have been done. This reply refers solely to electrical injury.

From this type of accident, neuroses are prone to arise, especially if litigation is involved; but opprobrium on account of this is frequently unjust. Genuine microscopic lesions may arise in any part of the central nervous system. The fact that the electrical path in this case embraced the head is of significance favorable to the concept of organic damage. Capillary hemorrhage in the brain or cord is a common form of injury from which chronic states may arise. Cellular changes, including edema, may be demonstrated in experimental animals in any portion of the brain. Increased intracranial pressure is frequent. Cases similar to the one cited are well known.

Therapy and prognosis should be based on observations of the pressure of the spinal fluid, the absence of evidence of neuroses, and disclosures from a careful neurologic examination of the cranial and vegetative nerves. This type of case frequently improves markedly on the termination of litigation.

Helpful information may be derived from:

Langworthy, O. R.: Factors in the Production of Nervous Lesions Following Electric Shocks, *J. Indust. Hyg.* **14**: 87 (March) 1932.
Urquhart, R. W. I.: Experimental Electric Shock, *J. Indust. Hyg.* **9**: 140 (April) 1927.
Morrison, L. R.; Weeks, Arthur, and Cobb, Stanley: Histopathology of Different Types of Electric Shock on Mammalian Brains, *J. Indust. Hyg.* **12**: 324 (Nov.) 1930.
Kober, G. M., and Hayhurst, E. R.: Industrial Health, Philadelphia, P. Blakiston's Son & Co., 1924, p. 831.

PREVENTION OF HEAT CRAMP

To the Editor:—There has been considerable discussion recently in regard to the efficiency of sodium chloride as a preventive treatment for heat cramp. In my opinion the value lies in bringing to the attention of the workman the hazards of drinking water in great quantities and at too low a temperature. Most heat cramp cases in my experience have as a basis of the trouble gastro-intestinal disorders, constipation, errors in diet, fatigue, and the like. I would appreciate it if you would write me your experience in regard to this industrial disease, and if you have had any experience in the use of sodium chloride as a preventive.

WILLIAM H. RICE, M.D., Ashland, Ky.

ANSWER.—Accumulated experience tends to prove that cases of heat cramp are at least in part attributable to excessive elimination from the body of chlorides in perspiration. Fatigue and gastro-intestinal disorders may be the result and not the cause, as implied in this query. However, in some instances antecedent disorders may be a factor in heat cramp cases.

Under suitable conditions as to temperature, humidity, muscular exertion and at times emotional state, as much as 6 liters of fluids may be lost from the adult human body in a single twenty-four hour period. However, the average daily loss of body fluids as sweat, under conditions of muscular exertion and heat, is much less, and under conditions attending most occupations does not exceed 3 liters.

The chloride content of sweat is not constant, varying in different body areas and with the duration of sweating. As sweating is prolonged, the percentage of chlorides increases. The extremes established under experimental conditions on human beings are: minimum, 4.3 mg.; maximum, 8.3 mg. per cubic centimeter of sweat. The average proved to be 6.5 mg.

In any assumed instance in which the chloride content is average (6.5 mg. per cubic centimeter) and in which the sweat output is 3,000 cc. during the twenty-four hours, the loss from the body of chlorides approximates 20 Gm., an amount that certainly may not be replaced by chlorides normally in foods and drinks.

Excessive and prolonged sweating eventuates in dehydrated tissues, gastric hypo-acidity, acidosis, fatigue, exhaustion, and muscular and gastro-intestinal cramps. These conditions are not alleviated by water alone and are in fact in some measure aggravated by water intake.

Salinized drinking water (sodium chloride from 0.25 to 1 per cent) goes far in the prevention and control of that form of fatigue or exhaustion occasioned by mineral losses from the body.

In any industry there may be workmen for whom this high intake of chlorides may not be advantageous. The introduction of salinized drinking water in industry should be under the guidance of a physician.

HERNIA IN A CHILD

To the Editor:—A well nourished, well developed boy, aged 1 year, has a big right sided inguinal hernia, the size of the child's fist. He is active, just commencing to stand alone. His appetite is fair but not good; the bowels tend to irregularity, although not constipated; there are occasional "gas pains." The hernia is easily reducible. What shall be done? Truss? Strapping with adhesive plaster? Operation? Please omit name.

M.D., New Jersey.

ANSWER.—The rather large size of the inguinal hernia would make it seem unlikely to be cured by the use of a truss. However, it might be worth while to fit a spring truss carefully and to leave it on all the time. If, on removal of the truss after a few months, the hernia comes out easily, operation should be done. The child is old enough to be operated on at any time he is in good health.

Some rather large hernias are apparently cured in infants under 1 year of age if a truss is properly fitted and kept on all the time. As the child grows larger, trusses must be used until it is felt safe to remove the support.

REPAIR OF CERVIX AFTER DELIVERY

To the Editor:—In the practice of obstetrics should the cervix, if torn, be sewed? A young man just from medical school and hospital says this practice is not only useless but harmful. What is the judgment of the best obstetricians? Please omit name.

M.D., West Virginia.

ANSWER.—The consensus among obstetric authorities is that in most cases a torn cervix should be sutured immediately after delivery. This applies to lacerations that cause bleeding and also to tears more than 1 cm. in length, even if there is no bleeding as a result of them. Small tears usually need not be sutured, because after the cervix has undergone involution these defects are extremely small and do not produce ill effects. However, a cervix should be sutured only in a clean hospital and only when there is sufficient assistance and good light. In a home where there is poor light and no assistance it is best not to repair cervical lacerations unless they produce hemorrhage. Even then it might be more expedient and safer to pack the uterus and vagina firmly. Without proper aid, the cervix cannot be repaired properly. Furthermore, in most homes and also in some hospitals there is great risk of infection. An experienced obstetrician working in a clean hospital should examine the cervix after every vaginal delivery, especially operative ones, and repair all large tears. This practice, however, should not be followed by inexperienced physicians. The latter can more safely wait until the patient returns for an examination six or eight weeks after delivery and then if cervical "erosions" are present he can successfully treat the "eroded" areas with an electric cautery. If a patient has fever during labor, the cervix should not be repaired immediately after delivery, no matter how extensive a laceration is, unless there is profuse hemorrhage as the result of the tear.

ALLERGY IN A CHILD WITH COMPLICATION OF RHINITIS AND ETHMOIDITIS

To the Editor:—A boy, aged 6 years, has an ethmoiditis of several months' duration. The results of general physical and clinical examination are negative except for parents' food allergy. The child's adenoids and tonsils were removed three years ago, and the adenoids were removed a second time two weeks ago. The question of diet is what I wish to be advised about. He eats all food except tomatoes, corn, beans, milk and its products, chocolate and eggs because of a moderate degree of allergy. He eats freely of oranges, spinach and other greens; meats; carbohydrates, as potatoes; several cubes of cane sugar; bread and cake. The bowel and kidney elimination are normal. He is several pounds overweight. Have you any further suggestions?

C. ARBUTHNOT CAMPBELL, M.D., Steubenville, Ohio.

ANSWER.—The treatment of protracted rhinitis and sinus infections, including ethmoiditis, presents great difficulties at times. Local treatment of the mucosa and operative intervention do not always give permanent results. For a time the allergic reaction of the patient was thought to be the principal and underlying cause. The offending substances were sought after and either they were eliminated or attempts were made to desensitize the patient.

This treatment has been thought by many to be successful in a considerable number of instances. There is, however, a group of patients whose upper respiratory tract is continuously affected. In one instance the mucous membranes are red, swollen and secreting profusely; in the other they are pale, because of a vasomotor constriction. A group of American rhinologists, among whom may be mentioned D. C. Jarvis of Barre, Vt., and Ira Frank of Chicago, have considered that these nasal conditions are an expression of metabolic variations. The red turgescent mucous membrane indicates an increase in the acid constituents of blood and tissues. The pale mucosa indicates an increased alkalinity. The rhinologists mentioned have found that the chronic rhinitis and ethmoiditis are most frequently due to vasoconstriction with pale mucous membranes, associated with an increased alkalinity of blood and tissues.

The treatment of this condition is directed, as they think, against the underlying metabolic disorder. To render the body less alkaline they advise the administration of nitrohydrochloric acid, from 3 to 5 drops well diluted in water, and an acid forming diet, which consists of meat, fish, oatmeal, rice, prunes, plums, cranberries and other acid producing foods of this type.

The group who are using it are encouraged by their results, and the treatment is so simple that it may be used without doing harm.

DOSAGE IN HIGH VOLTAGE ROENTGEN THERAPY

To the Editor:—I note an editorial in the April, 1932, issue of *Radiology* by Arthur W. Erskine of Cedar Rapids, Iowa, in which he states that roentgen therapy with 200 kilovolts does not possess any peculiar therapeutic virtue not possessed by 140 kilovolts, except that treatment with 200 kilovolts saves time for the doctor and permits him to treat many patients rapidly, this time factor being so small that it would be negligible in the ordinary day's work. On the other hand, he states that 140 kilovolts will deliver any requirement of deep therapy to any part of the body, the time for each area being one and one-half times as long, and more areas are necessary. Do you agree with the statements of this author, or do you still maintain that deep therapy can only be satisfactorily given with 200 kilovolts or higher?

EMERSON F. HOOVER, M.D., San Diego, Calif.

ANSWER.—The editorial by Erskine meets the approval of many roentgenologists. It is a basic principle that the biochemical effect depends on the amount of x-rays actually absorbed by the cellular structures; therefore the x-rays must be delivered to the part involved. The term deep therapy has come into use since the advent of apparatus capable of delivering a pressure (voltage) of 200,000 or more, and, as stated by Dr. Erskine, by the use of these higher voltages the actual

time consumed in delivering a given dose is decreased; however, it is still a question as to its superiority, and time alone will tell whether a rapid or slow delivery of a given amount of x-rays is desirable, because there is no definite concept as to the absorptive powers of organic materials, for reactions are judged empirically.

PREVENTION OF CHIGGERS

To the Editor:—As I have the misfortune to possess a thin, white skin, my life during the summer months is rendered almost intolerable by chiggers. If I cross the smallest garden patch I get them in swarms and even get them in motion picture theaters where they have been shaken off other people's clothes. I am writing to ask whether you can suggest any nonobjectionable spray for my clothing which would keep them off. Please omit name.

M.D., Texas.

ANSWER.—The chigger, or red-bug, is an annoying and sometimes serious pest of man. It is especially abundant in the South, where it is prevalent from early spring until killing frosts occur in the fall. The chigger is the first or six-legged stage of a large velvet mite. The chigger attaches itself to various animals and birds, fills with blood, drops off, molts its skin, and in subsequent stages is a scavenger and not harmful in any way. The presence of long grass, weeds and bushes not only protects the chiggers but encourages small animals which serve as hosts. Elimination of such favorable environment around the home is an important step in chigger control. The most effective way of protecting the person from attack is by applying sublimed sulphur to the skin and lower parts of the clothing. For hiking, bootees should be worn over close fitting trousers. A light application of kerosene oil around the shoe top will help keep the chiggers off. We know of no nonobjectionable spray which can be applied to the clothing.

PURULENT RHINITIS OR SUPPURATIVE SINUSITIS

To the Editor:—For a year and a half I have been afflicted with purulent rhinitis. I have tried practically everything, douches, atomizers, nebulizers and all the liquids for dispersion in the lower and upper nasal passages. I have been attended for weeks by one of our foremost nose and throat specialists with high tampons of 10 per cent mild silver protein with absolutely negative results. Having read about the now much more extended use of mercurochrome-220 soluble in THE JOURNAL, I wonder whether you know of any case treated with it. Otherwise, can you make any suggestion to help me to get rid of the rhinitis? Please omit name.

M.D., New York.

ANSWER.—It is most likely that the so-called purulent rhinitis is really a suppurative sinusitis. Rarely does the mucous membrane of the nose itself produce much pus; if it is present, it is almost invariably the result of drainage from one or more of the nasal accessory sinuses. The use of mercurochrome-220 soluble or other medicaments applied to the nose will hardly affect the nasal sinuses. Results cannot be expected unless the solution is actually introduced into the sinuses themselves, either by means of puncture with a trocar, as in the case of the maxillary sinus, or by instillation with a cannula into the natural opening of the antrum or the sphenoids. The most rational procedure is to have x-ray films made of all the nasal accessory sinuses in order to determine, if possible, which sinuses are infected, and then institute conservative treatment to promote drainage of the involved sinuses as the first procedure. If this does not suffice, one of the conservative operations would probably be indicated. The extent of the operation and the type selected will depend on the amount of disease found and the obstinacy of the infection, as well as its reaction to conservative treatment. In some cases of long duration, radical sinus surgery may be necessary.

SALIVATION DURING PREGNANCY

To the Editor:—A woman, aged 26, a primipara, whose physical history is negative, is in the third month of gestation. She complains of constant and excessive salivation. Kindly outline treatment. Please omit name.

M.D., New York.

ANSWER.—Fortunately, excessive salivation, or ptyalism, is a rare complication of pregnancy because the treatment of this condition is unsatisfactory. Some cases may be due to a reflex neurosis incident to pregnancy, but in most instances the condition is a form of toxemia somewhat comparable to hyperemesis gravidarum. When a neurotic element seems to be present, suggestion and psychotherapy may be tried. Since some women lose as much as a liter and more of fluid every twenty-four hours as a result of the constant drooling, and since more fluid is usually lost because of the nausea and vomiting which is a frequent accompaniment of salivation, it is most important that the patient receive large quantities of liquids. The quickest and most certain means is subcutaneous administration of at least 2 liters of physiologic solution of sodium chloride or Locke's solution daily. A diet limited to milk may be of great benefit. Drugs are rarely beneficial and the most helpful is sodium bromide, of which between 7 and 8 Gm. should be given in divided doses each day. Atropine may help, but it may also be harmful; hence great care should be exercised in using this drug. Sometimes the salivation ceases spontaneously after the fifth month, but usually it does not disappear until after delivery. It is important to examine the saliva for hydrochloric acid because it may be that the fluid which escapes from the mouth is not saliva but gastric juice. Salivation may recur in subsequent pregnancies.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The examination will be held in nineteen different cities in the United States and Canada, Oct. 22. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Montreal, Sept. 17. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at all centers where there are five or more candidates available in a Class A medical school, Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 8-9. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, Sept. 13-14. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 6. Sec., Dr. O. Costa-Mandry, Hospital Mimiya, Santurce, San Juan, P. R.

Illinois April Report

Mr. Paul B. Johnson, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held in Chicago, April 12-14, 1932. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Fifty-eight candidates were examined, 52 of whom passed and 6 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Yale University School of Medicine	(1904)	75
Chicago Medical School	(1931)	75, 80 *
School of Medicine of the Division of the Biological Sciences, University of Chicago	(1931)	83 *
Loyola University School of Medicine	(1931)	82, 83 *
Northwestern University Medical School	(1931)	82,* 82,* 82,* 84, (1932) 79,* 79, 79, 79, 79, 80, 80, 82, 82, 83, 83,* 84, 84, 84, 85, 86
Rush Medical College	(1931)	75, 76,* 77, 78, 79, 86,* (1932) 75,* 76, 80, 81, 82, 83, 84, 84,* 85,* 86
University of Illinois College of Medicine	(1931)	78, (1932) 79,* 81, 82, 84,* 84
Washington University School of Medicine	(1925)	77
Cornell University Medical College	(1929)	85 *
University of Manitoba Faculty of Medicine	(1930)	83 *
University of Edinburgh Faculty of Medicine	(1928)	81

FAILED		
College	Year Grad.	Per Cent
Loyola University School of Medicine	(1931)	66
Northwestern University Medical School	(1932)	74
Rush Medical College	(1932)	70
McGill University Faculty of Medicine	(1926)	69
University of Naples Faculty of Medicine and Surgery	(1925) (1930) 62 †	72,†

* Licenses withheld pending payment of fee.
† Verification of graduation in process.

Wyoming June Report

Dr. W. H. Hassed, secretary, Wyoming State Board of Medical Examiners, reports the written examination held at Cheyenne, June 13, 1932. The examination covered 12 subjects and included 114 questions. An average of 75 per cent was required to pass. One candidate was examined and passed. One physician was licensed by reciprocity. The following college was represented:

PASSED		
College	Year Grad.	Per Cent
Northwestern University Medical School	(1932)	83

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1914)	Kansas

Book Notices

Physiology of Bacteria. By Otto Rahn, Professor of Bacteriology, Cornell University, Ithaca, N. Y. Cloth. Price, $6. Pp. 438, with 42 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1932.

Students of the physiology of bacteria have at their disposal three modern books: Buchanan and Fulmer's comprehensive three-volume treatise, Marjory Stephenson's excellent discussion of bacterial metabolism, and now this thoroughgoing monograph. Rahn's book is in aim, if not in scope, somewhat more ambitious than either of the others in that the author attempts to relate the physiology of bacteria to general physiology or general biology and strives to keep in the foreground the "new conceptions . . . brought into general physiology through the study of bacteria." The four sections of the book —endogenous metabolism, energy supply of the cell, growth, and the mechanism of death—are dealt with as "the four functions which are indispensable for life" (p. 7). Within these limits, Rahn's discussion shows understanding and generally clear thinking. As in any book of this sort, a critical reader will meet with some surprises. There is no mention of the permeability of cell protoplasm and no reference whatever to the work of Overton or Osterhout with its possible connotations for bacteriologic problems. The author was surely nodding when he wrote (p. 368) "Bacteria, which by chemical poisoning have lost the power to multiply, may regain it if an antidote is used. This complicates the definition of death." On page 311 the statement is made without any apparent misgiving that "Lipman (1931) has succeeded in demonstrating living bacteria in coal." The style is sometimes opinionated, involved or careless and contains occasional Teutonisms in spite of the help given the author by his friends. "The causes of death might have been placed before the chapter on growth, but it seemed too odd to discuss death before growth [p. 8]; . . . it has been observed quite early" (p. 97). The book is well printed and few typographic errors have been noticed, one of the most obvious being on page 389. There will be general agreement among bacteriologists that Rahn has made a useful and important contribution to his subject.

Pathologie und Klinik in Einzeldarstellungen. Herausgegeben von L. Aschoff, H. Elias, H. Eppinger, C. Sternberg und K. F. Wenckebach. Band V: Mass und Zahl in der Pathologie. Von Professor Dr. Robert Roessle, Direktor des Pathologischen Instituts der Universität Berlin, und Dr. Frédéric Roulet, Oberarzt am Pathologischen Institut der Universität Berlin. Paper. Price, 16 marks. Pp. 144, with 27 illustrations. Berlin: Julius Springer, 1932.

In a brief introduction, Roessle and his associates stress the significance of "number and measure in pathology." Without disregarding the limitations of the methods, they consider them of great importance not only from a didactic point of view but also as offering the only possible way for comparison of the constitutional and racial data collected in the different parts of the world. They also point out that, at least so far, physical anthropology has been based almost exclusively on the somatology of the body surface and the extremities and that splanchnology as an anthropologic subject practically does not exist. It is for the purpose of stimulating further studies in this line that the little monograph has been written. In many tables and diagrams the weights of the different organs are given and the material is arranged according to age and sex. In addition to the arithmetical means of the organ weights and their relations to the body weight, one also finds in these tables the standard deviations and the middle errors. In order to obtain some information about the musculature, Roessle selected the right brachial muscle, which can be easily dissected out without much disfiguration of the body. Although the musculature of the body is composed of hundreds of individual organs, it is in the sense of the totality that the experiences collected on one of these organs can be regarded as representative of the entire group. There are also chapters on the body weight and length, on the rate of growth from the earliest stages of embryonic development, on the correlation of the organs, on the most important constitutional indexes, and on the signs of maturity. Because of the enormous material collected and the clear and concise matter of presentation, the little book can be highly recommended to clinicians, pathologists and anatomists.

The Iron Content of Vegetables and Fruits. By Hazel K. Stiebeling, Senior Food Economist, Division of Economics, Bureau of Home Economics. United States Department of Agriculture, Circular No. 205. Paper. Price, 5 cents. Pp. 19. Washington, D. C.: Supt. of Doc., Government Printing Office, 1932.

This circular presents data on the iron content of 110 different forms, parts or varieties of fruits and vegetables. The succulent vegetables and fruits are divided into four groups on the basis of their iron content: poor source (mostly fruits and fruit juices), less than 0.00040 per cent; fair (approximately one-half fruits), from 0.00040 to 0.00079 per cent; good (potatoes, thick pigmented stalks and leaves), from 0.00080 to 0.00159 per cent; excellent (immature seeds of leguminous plants and thin green leaves), 0.00160 per cent or more. Much of the iron in plant tissue is associated with chlorophyll. As a class the green colored vegetables are of great importance for their iron content, the more liberal use of which may well be encouraged to improve the American diet. Physicians and dietitians will want to have this circular at hand for practical use.

Die Regulation des Säure-Basen-Haushaltes in der Schwangerschaft und ihre Störungen bei den Schwangerschaftstoxikosen. Von Dr. Karl Julius Anselmino, Privatdozent für Geburtshilfe und Gynäkologie an der Medizinischen Akademie in Düsseldorf. Sonderausgabe von Heft 6 der „Abhandlungen aus der Geburtshülfe und Gynäkologie und ihren Grenzgebieten," Beihefte zur „Monatsschrift für Geburtshülfe und Gynäkologie." Paper. Price, 4.80 marks. Pp. 75, with 11 illustrations. Berlin: S. Karger, 1932.

In the first part of this monograph the author presents information concerning the acid-base equilibrium of normal pregnancy. From his own studies and the reports in the literature, he concludes that an acidosis in pregnancy is a physiologic occurrence. In the second part of the book the causes of this type of acidosis are discussed and also the acid-base equilibrium in the toxemias of pregnancy. For his investigations the author made use of the method of electrometric titration of the weak acids in the serum filtrate. He believes that the physiologic acidosis of gestation is due to a change in the glands of internal secretion, especially to overactivity of the thyroid. In hyperemesis gravidarum there is a moderate increase in the fixed acids of the blood. In all the cases of nephropathy that were studied there was a diminution in the physiologic acid content of the blood. This is in accord with the results obtained by American authors but is at variance with the belief of German investigators. On the other hand, in the majority of cases of eclampsia there is a moderate increase in the fixed acids of the blood. There is no parallel between the extent of the acid changes in the blood and the severity of the clinical symptoms. The author's studies show that in eclampsia there is only a minor disturbance in the acid-base equilibrium, and when it is pronounced it is usually due to alterations in respiration and to alkalipenia and only rarely to an increase in the fixed acids of the blood. The monograph contains little that is new, but it is an excellent review of the subject. The author is well qualified to write on this subject because he and Hoffman have done much good work in this field.

Children Who Cannot Read: The Analysis of Reading Disabilities and the Use of Diagnostic Tests in the Instruction of Retarded Readers. By Marion Monroe, Research Psychologist, Institute for Juvenile Research and Behavior Research Fund. Cloth. Price, $2.50. Pp. 205, with 47 illustrations. Chicago: University of Chicago Press, 1932.

This monograph should be highly valuable to every one interested in the handicapped child. In it Dr. Monroe reports a fruitful study of children's reading disabilities, describing the analysis and treatment of a large number of patients ranging in age from 6 to 18 years. There is also included a description of the remedial measures taken in the case of an adult who had lost the ability to read after an attack of encephalitis. Some of the topics that should prove especially helpful to those engaged in problem case work are (*a*) the use of the reading index to distinguish special reading disability from general learning disability; (*b*) the diagnostic significance, at successive reading-grade levels, of varying frequencies of certain errors in word recognition and oral reading; (*c*) an elaborate and detailed analysis of causative factors in reading defects, and (*d*) a richly suggestive chapter dealing with methods appropriate for use in remedial instruction. As Dr. Monroe

indicates in her discussion of the causative factors in reading defects, only a portion of the field was quantitatively studied. This will explain what many will feel to be a regrettable absence—the omission of appropriate emphasis on conceptual and methodological factors in reading deficiencies. The recommendations and suggestions offered in connection with the factors particularly studied, however, are likely to find wide acceptance because of the investigator's superb control of experimental technics and clear insight into children's difficulties. If this report is as widely read as it deserves to be, it should exert a powerful influence in breaking down the frequently encountered and utterly erroneous assumption that a child who is a poor reader is always stupid. By studying a large number of children with special reading disabilities, Dr. Monroe has clearly proved that, provided his needs are wisely diagnosed and met, the handicapped child's reading accomplishments can be brought more nearly in harmony with what his age, intelligence and other scholastic achievement lead one to expect from him. As in other fields, adequate diagnosis and intelligent remedial treatment in the field of reading can materially decrease the fatalities. Dr. Monroe has greatly refined and extended the teacher's knowledge of diagnosis and remedial instruction in reading.

Les maladies organiques du faisceau de His-Tawarra: Les syndromes coronaires. L'endocardite septale. L'infarctus septal. (Étude clinique et anatomique.) Par Ivan Mahaim, privat-docent à la Faculté de médecine de Lausanne. Préface du Prof. Michaud. Paper. Price, 80 francs. Pp. 595, with 188 illustrations. Paris: Masson & Cie, 1931.

The book begins with a detailed description of the anatomy of the bundle of His, a review of its physiology, and a discussion of the various clinical and pathologic-anatomic methods of its examination. Many will welcome the minute directions as to how to section the heart so as best to locate the lesions in the bundle and its branches and in the arteries and muscles that are intimately concerned. A point that is stressed by the author is that a distinction may and should be made between lesions that are inhibitive in nature and those that are irritative. The latter, such as may come from ischemia of the bundle or from inflammation or some types of degeneration, he terms evolutive; they lead to tachycardic manifestations. The bradycardic, on the contrary, are terminal or cicatricial; they may involve the Tawara node, the main trunk of the bundle, or its branches. He discusses the relations of these various forms to disorders of the coronary arteries, lesions of the valves, and inflammation of the myocardium, especially the septal portion. There is a separate chapter devoted to the bundle of His and congenital lesions of the septum. The final chapter takes up prognosis and treatment. The book is replete with facts, with a moderate admixture of theory. Critical readers may feel that at times the urge to simplify, clarify or vivify has led to descriptions, classifications and conclusions that need confirmation by later study and observation. There are many case histories with clinical and anatomic diagnoses. Abundant illustrations of pathologic specimens and electrocardiograms, together with ingenious diagrams and schemas, are helpful. An alphabetical bibliography of 1,032 items is found at the end of the volume. The book is definitely not adapted to the needs of the general practitioner. It will, however, make an appeal to the specialist in cardiology, who will find in it a rich field for study and speculation. We may well believe Michaud when in the preface he says that the volume is the result of patient and conscientious research that has extended over many years.

Modern Medical Treatment. By E. Bellingham-Smith, M.D., F.R.C.P., Physician and Lecturer on Medicine, St. George's Hospital, and Anthony Feiling, M.D., F.R.C.P., Physician and Lecturer on Medicine and Dean of the Medical School, St. George's Hospital. In two volumes. With an introduction by Sir Humphry Rolleston, Bart., G.C.V.O., K.C.B. Cloth. Price, $12 per set. Pp. 701 and 705. New York: William Wood & Company, 1931.

This is a valuable addition to the physician's library. The treatment of disease is carefully outlined and logically discussed from the standpoint of etiology and pathologic physiology. The index is voluminous and makes any problem in therapeutics readily accessible. It is to be highly recommended for those who wish to have close at hand a modern medical treatment.

Diätetik bei chirurgischen Erkrankungen: Kurzgefasste theoretische und praktische Anleitung zur Ernährung chirurgisch Kranker. Von Dr. F. W. Lapp und Dr. H. Neuffer, Krankenhaus der Stadt Wien. Paper. Price, 9 marks. Pp. 158, with 7 illustrations. Vienna: Julius Springer, 1932.

This book was written through the collaboration of a medical man and a surgeon from their experience in the surgical service of the large city hospital in Vienna. The work was done under the supervision of the heads of these departments. The importance of a carefully regulated diet is first discussed, with the many indications for a restriction of certain kinds of food and the increase of other types in surgical patients. Owing to the greater tendency for the development of thrombosis and embolism in the obese, it may be classed as one illustration for the necessity of preoperative management. The alteration of the normal function in various surgical conditions is discussed and the necessary changes are stated. General indications for regulating diet following operation are considered. Particular emphasis is placed on complicating diseases, such as diabetes, and a diet for each is included, at various periods before and after operation. Proper diets are described for the most frequent surgical diseases, with especial emphasis on the gastrointestinal tract, the biliary system, the pancreas and the thyroid, together with operative complications. The dietetic treatment of the edemas based on their origin is considered in some detail. Numerous tables of diets are inserted in full, and a hundred recipes used in the hospital, largely in the preparation of a soft diet for patients before and after operation, are added. It should be the duty of every surgeon to become acquainted with this timely study. The book clearly and briefly explains the indications for the various diets; it includes the proper diet and, frequently, the actual method of preparation.

Handbook of Tropical Fevers. By N. P. Jewell, M.D., D.P.H., F.R.C.S.I., European Hospital, Nairobi, Kenya, and W. H. Kauntze, M.D., D.P.H., Deputy Director of Laboratory Services, Kenya. With a foreword by A. T. Stanton, C.M.G., M.D., F.R.C.P., Chief Medical Adviser to the Secretary of State for the Colonies. Cloth. Price, $6. Pp. 485, with 92 illustrations. New York: William Wood & Company, 1932.

One reads this volume with mixed feelings. Many parts of it are excellent, especially the introductory chapter on diagnostic routine in the presence of fever, and on unclassified fevers. This chapter could have been expanded with advantage into a full and meaty discussion, including detailed review of tropical changes in cosmopolitan fevers. The same may be said for the excellent section on malarial prophylaxis and on the epidemiology of plague, as well as the entire discussion of plague. In spite of these admirable sections, one is inclined to feel that the purpose of the book has not been fulfilled. The preface designs the book for the student who needs a sound knowledge of the basic facts of tropical disease. The subject matter is not sufficiently extensive and the treatment not sufficiently comprehensive to meet this object. In the second place, it is designed for practitioners in the tropics. The same objections hold. In the third place, it is designed for practitioners at home, apparently meaning in England. For all these objects, the standard textbooks of Manson-Bahr and Stitt are vastly more satisfactory.

The title at once limits the usefulness of the book and could well include, as has been said, a detailed discussion of cosmopolitan fevers in the tropics. The inclusion of amebiasis under fevers is of doubtful propriety. More detailed criticism of the chapter on amebiasis shows that the spelling "Entamoeba" is used in place of the more correct "Endamoeba." The old and nondescriptive term "vegetative" is retained. Stool culture is recommended for diagnosis in spite of the technical difficulties for the ordinary office laboratory and the small percentage increase of positives even in a well equipped laboratory. Personal hygiene and infected food handlers are not sufficiently stressed in prophylaxis. The description of amebic pathology omits granulomas and amebic foci in adjacent parts. The relationship of amebiasis to secondary bacterial infection is not discussed, either symptomatically or therapeutically. One would like more proof that an amebic patient can make a complete recovery without development of what is still called a "carrier" stage. One questions why great care in diagnosis is necessary even if Brumpt's classification of the E. histolytica group *is* accepted. The exact details of microscopic diagnosis are not nearly sufficient for either the student or the practitioner, and the need of qualified technical diagnosis is not emphasized.

The discussion of treatment is an uncritical hodgepodge, and the dosage of emetine advised is maximal. No caution is offered as to the toxicity of "stovarsol." The use of proprietary names is all too common in the entire book. On one page "stovarsol" is discussed and on the next page it is stated that "C. Craig" (no reference) suggests acetarsone.

One can seriously criticize the classification and diagnosis of bacillary dysentery. There should certainly be more discussion of the diagnosis of dysentery as a symptom. Treatment directions are too vague and the judgment on bacteriophage is doubtless too harsh. Under typhoid, the old idea is followed that digestion and assimilation are seriously decreased. The presentation of dietary treatment is incomplete and not in accord with newer accepted methods of high calory intake, nor is proper diet discussed in relation to prevention of complications.

The discussion of heat stroke is not clear. A chart of "hyperthermia" shows a maximum temperature of 103.8 F. One might take exception to the description of Sinton's alkaline treatment of malaria as most approved under all conditions. Also one cannot concur in the recommendation of 10 grains of quinine in 2 cc. of water for intramuscular injection. This method of dosage is painful, prone to cause abscess, and rarely or never necessary. Also the dose of 15 grains of quinine intravenously is excessive. A small dose, in smaller fluid volume, injected slowly, and repeated as needed, is preferable.

The authors ignore recent work on relapsing fever in the United States, and note only the tick and louse as vectors. The chapter on undulant fever is not comprehensive, treatment is poorly covered, and recognition of important Italian and American work is omitted.

In general, this volume enters a field already adequately covered, and, in spite of some excellent individual features, does not bring new values.

Handbuch der mikroskopischen Anatomie des Menschen. Herausgegeben von Wilhelm v. Möllendorff. Band II: Die Gewebe. Teil 3: Gewebe und Systeme der Muskulatur. Bearbeitet von Dr. Gösta Häggqvist, Professor an der Universität Stockholm. Paper. Price, 52 marks. Pp. 247, with 137 illustrations. Berlin: Julius Springer, 1931.

This book constitutes the third part of the second volume of the Handbook of Microscopic Anatomy, edited by Wilhelm von Möllendorff and published by Julius Springer. It deals with all three kinds of muscle, smooth, cardiac and skeletal, with their structure, their relation to connective tissues, their manner of working, their development and their life history, and the changes with age that develop in them. A fourth section deals with locomotor apparatus in general. Introducing the section devoted to each of these subjects is an historical review of the development of our knowledge and theories. This constitutes one of the most valuable features of the work. The account of the relations of muscle to connective tissue and tendons, the relations of tendon to bone and soft parts, and the manner in which muscle tissue and the locomotor apparatus in general works is based on fundamental questions of structure and function in a manner which is admirably clear and instructive and which sets forth the problems in a stimulating way. The illustrations have been selected with discrimination from the literature of all time. Some excellent ones are from Leeuwenhoek, dating back to 1694. The format is a demonstration of how much such work can contribute to the delight and satisfaction of study.

Foods in Health and Disease. By Lulu G. Graves, Consultant in Nutrition and Diet Therapy. Cloth. Price, $3.50. Pp. 390, with 50 illustrations. New York: Macmillan Company, 1932.

This book is primarily designed for the nonprofessional concerned with the broad subject of foodstuffs. It will find its most useful field as a reference book in the libraries of teachers of home economics, housewives, and women's clubs. The greater portion (277 pages) of the volume is devoted to detailed descriptions of food materials, their production, cultivation, composition, transportation and use in the home menu. In this respect it resembles an encyclopedia of foods. The account is fairly complete and includes many of the more exotic foodstuffs, such as chayote, orzata, topepo, chinkapin, banana flour, tangelo, cardoon and udo, which might not be found in many food books. The second portion (sixty-five pages), as stated in the introduction by the author, is intended as a brief discussion of the broad subject of food in disease. Therefore, the cursory treatment of many of the subjects leaves much unanswered in the mind of the reader. To supplement this defect, the author has included substantial bibliographies at the end of each chapter to suggest further reading. The chapter on preservation of foods and food infections, as well as an informative chart on cathartics, has merit.

Kurzwellentherapie: Die medizinische Anwendung kurzer elektrischer Wellen. Von Dr. Erwin Schliephake, Privatdozent für innere Medizin an der Universität Jena. Physikalischer Anhang von Dr. L. Rohde, Assistent am technisch-physikalischen Institut, Jena. Geleitwort von Prof. W. H. Veil, Direktor der Medizinischen Univ.-Klinik, Jena. Paper. Price, 10 marks. Pp. 174, with 120 illustrations. Jena: Gustav Fischer, 1932.

This monograph is the first one in the world literature on the physical and therapeutic aspects of a hitherto not utilized portion of the electromagnetic spectrum, situated between the hertzian waves and infra-red radiation. The waves of this portion have been named short waves, because they are shorter —about 3 meters in length—than those emitted by a wireless or a high frequency apparatus. The author, who is perhaps the foremost investigator of the biologic effects of short waves, divides his work into six parts. The first four present in minute detail, well illustrated with diagrams, fever charts and photographs, the physics of short waves, their production, method of application and experimental effects on bacteria, animal tissue and human tissue. It is shown that, in contrast to diathermy, maximum heat effect takes place in the depth of the part exposed between the condenser plates of the secondary circuit of the short wave apparatus. The warming of the skin being much less evident, one cannot depend on skin tolerance for a safe technic. It is also admitted that the milliamperemeter gives only an approximate estimate of the strength of the electric field. The possibility of a burn in the depth is thus present. There are differences in the reaction of individuals as well as of tissues, and the most effective wavelength has not been fully determined. The fifth part deals with the results in pathologic conditions in animals, notably experimental infections and tumor transplants. The final and most important part of the monograph carefully attempts to evaluate short wave therapy in superficial suppurative conditions of the human system. Favorable results are shown in furuncles, carbuncles, paronychia, dental infections, empyema of the nasal sinuses and of the chest, monarticular remnants of polyarthritis, osteomyelitis, localized infiltrations of the lungs and early bronchiectasis. Schliephake envisages the possibly of short waves as that of a *therapia sterilisans magna* for destroying localized bacterial invasion in situ. This excellent presentation will serve as a welcome guide for students of this most recent field of physical therapy, which is as yet in its infancy.

Plan and Technique of Developing a Prison into a Socialized Community. By J. L. Moreno, M.D. A Preliminary Report Prepared in Collaboration with E. Stagg Whitin, Ph.D., Chairman, Executive Council. Paper. Pp. 67. New York: National Committee on Prisons and Prison Labor, 1932.

This plan, prepared by a physician who has had opportunities to participate in work with prisoners at Sing Sing, suggests that a careful medical and personality study be made of each prisoner. After this the men are to be grouped in small units, each under the leadership of a selected prisoner. The classification must take into account not only each individual's qualities but the way in which the individuals of each small group will interact with one another. The author gives reasons to believe that the plan is practicable and that a prison thus organized will be easy to administer and will tend to improve its inmates and to eliminate many of the disciplinary and administrative duties that now overburden prison staffs.

J. Schäffers Behandlung der Haut- und Geschlechtskrankheiten. Bearbeitet von Dr. Karl Zieler, o. ö. Professor und Vorstand der Universitätsklinik und Poliklinik für Haut- und Geschlechtskranke in Würzburg, und Dr. Conrad Siebert, bisher leitender Arzt der Abteilung für Haut- und Geschlechtskranke am Krankenhause Berlin-Lankwitz. Eighth edition. Cloth. Price, 13.80 marks. Pp. 487, with 87 illustrations. Berlin: Urban & Schwarzenberg, 1932.

This edition shows evidences of a careful revision by the authors. There are new sections on treatment with grenz rays, on the newer dietetic treatment of lupus vulgaris, and on lymphogranulomatosis inguinalis. The alphabetical arrangement and the emphasis on pharmaceutic therapeusis are valuable features of the work.

Medicolegal

Evasion of Privileged Communication Statute

(Hogan v. Bateman Contracting Company (Ark.), 43 S. W. (2d) 721)

Hogan, 16 years old, was lifting sacks of cement, weighing about 95 pounds each. He was suffering with pains in his side, and according to the evidence, while he was handling a sack of cement something tore loose in his side. He started home but was unable to go and had to be taken in a car. He was put to bed and after suffering a great deal was taken to the hospital. There he was treated by the physician for his employer, the appellee. He continued to suffer pain and after two or three days was taken to another hospital and operated on for hernia. In 1927, Hogan had been examined for a hernia and advised to wear a truss, but he was told he was not ruptured. The present accident occurred June 30, 1930. At the time of the accident Hogan was apparently in a perfectly sound physical condition. While he was in the hospital under the care of his employer's physician, Hogan made a statement. The physician wrote the statement in pencil and had it typed by a notary public, who, in the presence of the physician, read it to Hogan and witnessed his signature.

Hogan sued his employer, basing his right to recover damages on the law limiting the hours of employment of boys and girls under 18 years of age. He claimed that working overtime previous to the date of his injury weakened his condition and that the strain in lifting excessive weights caused the hernia. A judgment was rendered against him. He then appealed to the Supreme Court of Arkansas. Among the errors of the trial court urged in support of his appeal was the admittance in evidence of the statement Hogan had signed, and the testimony of the notary public who prepared it.

The evidence of the attending physician in this case, said the Supreme Court of Arkansas, was clearly inadmissible. The information he received came to him while attending Hogan in a professional capacity, and he could not, over objection, testify as to any such information. As was held by the Supreme Court of Arkansas in *Mutual Life Insurance Company* v. *Owen*, 111 Ark. 554, 164 S. W. 720, the purpose of the statute relating to privileged communications is to cover the relation of physician and patient with the cloak of confidence and thus to allow a greater freedom in their communications to each other in regard to matters touching the disease of the patient. Such statutes are enacted as a matter of public policy, to prevent physicians from disclosing to the world the infirmities of their patients. In the present case, the testimony of the notary public who was called in by the physician to typewrite the statement made by the patient, to read it to the patient, and to witness the patient's signature, was no more competent than the physician. If a physician could call in any third person and disclose to such person his information and thereby enable that person to testify, the statute would be of no effect; the physician could always evade the statute in that way. It has been repeatedly held that other physicians, either partners or physicians called in consultation, present when a statement is made, cannot testify, and a communication made in their presence is privileged under the statute, and it would be an evasion of the statute to admit in evidence information thus obtained.

Notwithstanding the error in admitting in evidence Hogan's statement and the testimony of the notary concerning it, the judgment of the trial court was affirmed because it did not appear that the violation of the statute limiting the hours of employment of children, on which statute Hogan based his suit, was the proximate cause of the injury.

Evidence: Admissibility of Extracts from Medical Books.—Extracts from medical books, says the Supreme Court of Arkansas, are not admissible in evidence, for the very sufficient reason that the author does not write under the sanctity of an oath and has not been subjected to cross-examination. Statements from such books may not be presented as such in the arguments of counsel. They cannot be introduced by means of questions put on cross-examination, as by reading an opposing opinion from a textbook and asking the witness whether it is or is not true; that would have the effect of putting the statement in evidence and thus accomplish by indirection what is expressly forbidden. Counsel may, however, use a medical book to aid him in framing questions to be asked of a physician testifying as an expert, but cannot read from such books to the jury. In cross-examining an expert witness who bases his opinion on a textbook, an attorney may read extracts from the authorities for the purpose of impeaching him.—*Moore v State (Ark.), 43 S. W. (2d) 228.*

Workmen's Compensation Acts: Course of Medical Treatment Not Determinable by Employer.—The Oklahoma workmen's compensation acts, says the Supreme Court of Oklahoma, does not grant to an employer or to his insurance carrier authority to direct the attending physician to amputate an employee's injured foot in order to save the expense that might be incurred in treating it. Even though it is the duty of an employer and of an insurance carrier to provide necessary care and treatment, neither of them has authority to determine the treatment that the physician is to administer or to interfere in any way with the judgment of the physician as to the proper course of treatment.—*Blackstock v. Airington (Okla.), 5 P. (2d) 381.*

Wills: Opinion as to Testamentary Capacity.—In an action to contest a will, a physician who attended the testatrix may testify to such facts as tend to shed light on her mental condition and may give his opinion concerning it. He should not be allowed to give an opinion as to the mental capacity of the testatrix to make the will in question. Such an opinion presupposes knowledge on the part of the physician concerning the degree of capacity the law requires in order that a will may be valid. It involves, too, the physician's opinion, not only as to the fact of the capacity of the testatrix but also as to the legal consequences of the facts which he has observed or as to which he has an opinion. The testimony of an expert witness, as well as of all other witnesses, cannot be received if it amounts to a conclusion of law.—*Fields v. Luck (Mo.), 44 S. W. (2d) 18.*

Evidence: Testimony of Lay Witness as to Absence of Syphilis Not Admissible.—While it may be conceded, says the Supreme Court of Alabama, though this is not decided, that a wife who has lived with her husband in conjugal relations for twenty-seven years continuously may be qualified to testify that on a specific date he was not affected with an acute venereal disease, we are not prepared to hold that she is competent to state as a fact or express an opinion that the husband did not have syphilis. The authorities establish a contrary rule.—*Mutual Life Ins. Co. of New York v. Mankin (Ala.), 138 So. 265.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Montreal, Sept. 19-23, Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Neb., Executive Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, French Lick, Indiana, Sept. 12-14. Dr. Magnus A. Tate, 19 West Seventh Street, Cincinnati, Secretary.

American Congress of Physical Therapy, New York, Sept. 6-10. Dr. F. B. Balmer, 185 North Wabash Avenue, Chicago, Secretary.

American Hospital Association, Detroit, Sept. 12-16. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

Colorado State Medical Society, Estes Park, Sept. 8-10. Mr. Harvey T. Sethman, 227 16th Street, Denver, Executive Secretary.

Idaho State Medical Association, Pocatello, Sept. 16-17. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Michigan State Medical Society, Kalamazoo, Sept. 13-15. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Nevada State Medical Association, Reno, Sept. 23-24. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

Oregon State Medical Society, Klamath Falls, Sept. 22-24. Dr. Albert W. Holman, 410 Taylor Street, Portland, Secretary.

Utah State Medical Association, Ogden, Sept. 15-17. Dr. Leland R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.

Washington State Medical Association, Tacoma, Sept. 12-14. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 14-16. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal Medical Sciences, Philadelphia

183: 593-740 (May) 1932

Peroral and Intravenous Cholecystography: Comparison of Relative Merits and Results in One Hundred Cases. L. H. Hitzrot and E. P. Pendergrass, Philadelphia.—p. 593.
*Pathogenesis of Perigastric Abscess Complicating Peptic Ulcer. H. A. Singer and P. A. Rosi, Chicago.—p. 600.
Insulin and Appetite: I. Method for Increasing Weight in Thin Patients. L. H. Nahum and H. E. Himwich, New Haven, Conn.—p. 608.
Metabolic Changes and Treatment of Obesity. M. G. Wohl, Philadelphia.—p. 613.
*Craig Complement-Fixation Test for Amebiasis in Chronic Ulcerative Colitis. E. D. Kiefer, Boston.—p. 624.
*Study of Capillary Pressure in Nephritis and Hypertension. I. Mufson, New York.—p. 632.
*Practical Application of Blood Sedimentation Test in General Medicine: Observations Based on Approximately Five Thousand Patients Over a Period of Six Years. J. W. Cutler, Philadelphia.—p. 643.
Pathologic Changes Occurring in Polymorphonuclear Leukocytes During Progress of Infections. M. A. Kugel and N. Rosenthal, New York.—p. 657.
Trichiniasis: Discussion, with Reference to Eleven Recovered Cases in a Family. E. C. Reifenstein, E. G. Allen, Syracuse, N. Y., and G. S. Allen, Clyde, N. Y.—p. 668.
Primary Angiofibroma of Diaphragm. E. Burvill-Holmes and W. Brody, Philadelphia.—p. 679.
Facial Diplegia in Polyneuronitis. G. Wilson and H. F. Robertson, Philadelphia.—p. 680.
Cerebellar Apoplexy. J. C. Michael, Minneapolis.—p. 687.
Spontaneous Bilateral Pneumothorax: Report of Case and Review of Literature. B. T. McMahon, Loomis, N. Y.—p. 695.
Respiratory Measurements as Affected by Smoking and Athletics. F. C. Turley and T. R. Harrison, Nashville, Tenn.—p. 702.

Perigastric Abscess Complicating Peptic Ulcer.—In thirty cases of perigastric (including subphrenic) abscess of ulcer origin, Singer and Rosi obtained convincing evidence of a previous acute perforation into the free abdominal cavity in twenty-nine. They believe that the formation of adhesions which are found about a perigastric abscess generally follows rather than precedes perforation. Between the time of recovery from the acute symptoms of perforation and the time of onset of manifestations of a perigastric abscess, a period of fair health frequently intervenes. It is on this account that a patient often fails to associate the two illnesses. Unless a previous acute perforation is suspected and a minute-by-minute history of the initial symptoms obtained, the antecedent occurrence of a sudden, violent abdominal pain is often not elicited. In most instances a perigastric abscess of ulcer origin represents a neglected opportunity on the part of the patient, but perhaps more frequently on the part of the physician. Early recognition of perforated peptic ulcer, especially the type with mild postoperative symptoms (abortive form), together with timely operation, will eliminate the greater number of perigastric abscesses.

Craig Test for Amebiasis in Chronic Ulcerative Colitis.—Kiefer points out that it is extremely difficult to differentiate between chronic ulcerative colitis and chronic amebic colitis. The result of the Craig complement-fixation test for infection with Endamoeba histolytica when applied to patients with chronic ulcerative colitis is reported showing that fifteen out of nineteen cases gave a strongly positive reaction. No conclusions as to the significance of this observation are drawn, but it is suggested that chronic ulcerative colitis may be a pyogenic infection of the colon superimposed on an original amebic ulceration.

Capillary Pressure.—A comparison is made by Mufson between the capillary morphology found in essential hypertension and peripheral arteriolar spastic (Raynaud's) disease. From their marked difference it seems more probable that essential hypertension is due not solely to arteriolar spasm but to a generalized arterial spasm. The frequent association of high capillary blood pressure with renal disease is indicative of a spasm response due to a severe involvement of the systemic capillary system. A relationship between the capillary pressure and osmotic pressure of the blood to the presence of edema was found to exist in nephritis.

Blood Sedimentation Test in General Medicine.—Cutler studied the blood sedimentation test in hospital, office and dispensary practice during the past six years with more than 5,000 patients. The test was found to be of distinct diagnostic and prognostic value in diseases characterized by disturbed stability of the blood. In diagnosis the test has two values, first as a diagnostic lead and second as a diagnostic gage. As a diagnostic lead it indicates the presence of serious disease, not infrequently before the disease can be recognized by the usual clinical and laboratory methods. As a gage of the constitutional disturbance produced by the pathologic process, it indicates the intensity of the disease and thus, like fever or pulse rate or blood count, but more exactly, helps to complete the diagnosis in a qualitative sense. As a prognostic index and, similarly, as a guide in treatment, the rate of sedimentation has been shown to be a more accurate and reliable reflection of the real condition of the patient than the usually accepted procedures. It invariably becomes more rapid as the disease progresses, and approaches stability only as the physical condition returns to normal. It is not influenced by psychologic factors and may be the only warning of disaster among promising clinical signs, such as gain in weight and the absence or subsidence of symptoms. In this way it is often the only, or the most accurate, evidence of favorable, or of unfavorable, response to treatment. The test is simple to perform and to interpret and is inexpensive. It is a clinical procedure and can be carried out in the office, in the dispensary or at the bedside. The complete result is available within an hour, and in case of necessity the sedimentation test will give valuable information within the first half hour. Its greatest field of usefulness should be in office and dispensary practice, especially in the latter, where large numbers of patients must often be seen in short periods of time and by men seeking experience. Properly interpreted and used with an open mind, the test should in time become one of the most widely used tests in clinical medicine. Its practical value in any given disease is best studied as a separate problem, and such studies should be undertaken in large numbers so that sufficient data become available in a short period of time. Only in this way will lingering doubts be removed and the sedimentation test firmly established as a valuable addition to the equipment of the physician.

American Journal of Ophthalmology, St. Louis

15: 397-492 (May) 1932

Ophthalmia Aegyptiaca. R. P. Wilson, Cairo, Egypt.—p. 397.
*Theoretical and Practical Study of Intracapsular Cataract Extraction. R. Castroviejo, New York.—p. 406.
*Adenocarcinoma of Lacrimal Gland: Case Report. R. H. Freyberg, Ann Arbor, Mich.—p. 417.
Chemical Constitution of Cornea. A. C. Krause, Baltimore.—p. 422.
Glioma Exophytum. R. M. Cutino and R. Lloyd, Brooklyn.—p. 425.
Hyaloid Membrane of Vitreous. A. Cowan and W. E. Fry, Philadelphia.—p. 428.

Intracapsular Cataract Extraction.—Castroviejo presents a critical study of the four methods of cataract extraction most employed, namely, the classic extracapsular method and the three intracapsular methods, Smith Indian, forceps and suction. The advantages and disadvantages are set forth on theoretical grounds and on the basis of results reported by the leading exponents of each method and of the author's experience. Theoretically and practically, the operation of Smith is inferior to the operations of Elschnig (forceps) and Barraquer (suction), owing to its greater number of complications, especially loss of vitreous, deviation of the pupil upward, and incarceration of the iris. The forceps method as it is performed by Elschnig is a rational operation, which unites the advantages of the Smith and the forceps methods, without their inconveniences, and requires only a simple instrumental equipment; it has no other inconveniences except that it gives a number of ruptured capsules, which varies between 20 and 30 per cent. The Barraquer method is theoretically and practically the best and

most perfect of the intracapsular operations, because it gives as good visual results as the combined method of Elschnig and has no more complications. It has, on the contrary, the advantage that it rarely ruptures capsules. The only drawback to the method is the cost of the instrument. The development of intracapsular operations and their actual use without exposing patients to serious complications has been due to the systematic application of all the complementary details to assure a perfect immobility of the patient, to facilitate the surgical moment, and to effect a convalescence without accidents. As the intracapsular methods are not applicable to juvenile and traumatic cataracts, with posterior synechia and other complications, the classic method is necessary in these cases.

Adenocarcinoma of Lacrimal Gland.—Freyberg reports a case in which a recurrent neoplasm of the right orbit was known to have been present twenty-five years, in the course of which time an enucleation of the displaced eyeball and two exenterations of the right orbit were performed, nine, sixteen and twenty-five years, respectively, after the tumor was first noticed. The character of all the neoplastic tissue available for microscopic study, extending over a period of nine years, is that of a pure adenocarcinoma. From an analysis of the literature concerning tumors of the lacrimal gland, and the protracted history of this case, the author suggests that this adenocarcinoma may have originated in a mixed tumor of the salivary gland type, by the epithelial elements overgrowing the supporting tissue components.

American Journal of Physical Therapy, Chicago

9: 29-56 (May) 1932

A Doctor Looks at Shoes. N. D. Mattison, New York.—p. 33.
Physiotherapy and Electrotherapy Demonstrations. P. V. Montville.—p. 39.
Uvula and Posterior Pillar Protection in Suction Tonsillectomy. J. B. H. Waring, Cincinnati.—p. 42.
Clinical Study of the Reaction of Skin to Ultraviolet Light. H. Goodman, New York, and H. S. Abel, Providence, R. I.—p. 44.

American Journal of Public Health, New York

22: 455-578 (May) 1932

Intermittency in Growth as an Index of Health Status. C. E. Turner, Ellen Lytle and Charlotte Winnemore, Columbus, Ohio.—p. 455.
Meaning of "Antiseptic," "Disinfectant" and Related Words. A. M. Patterson, Yellow Springs, Ohio.—p. 465.
A Health Aspect of Frozen Vegetables. R. P. Straka and L. H. James, Washington, D. C.—p. 473.
Identification of Certain Funguses Pathogenic for Man. W. D. Stovall and Anna Bubolz, Madison, Wis.—p. 493.
Monilias, Yeasts and Cryptococci: Their Pathogenicity, Classification and Identification. Rhoda W. Benham, New York.—p. 502.
What Constitutes Health Education in High School? I. Galdston, New York.—p. 505.
Judging Efficiency of Enforcement of Sanitary Milk Regulations. J. D. Brew, Albany, N. Y.—p. 514.
Modified Cellobiose Broth for Differentiation of B. Coli and B. Aerogenes. J. E. Dowd, New York.—p. 537.
Preparation of Medium for the Culture of Bacterium Tularense. R. E. Daniels, Columbus, Ohio.—p. 539.

American Journal of Surgery, New York

16: 199-400 (May) 1932

*Lesions in and Adjacent to Sella Turcica. C. H. Frazier, Philadelphia.—p. 199.
*Modification of the Devine Operation of Pyloric Exclusion for Duodenal Ulcer. F. W. Bancroft, New York.—p. 223.
*Tumors of Cecum: Discussion and Report of Seventy Cases. J. F. Erdmann, New York.—p. 231.
Fascial Transplants for Closure of Orifice of Umbilical Hernia. G. P. LaRoque, Richmond, Va.—p. 239.
*Impracticability of Using Fascia for Gradual Occlusion of Large Arteries. H. E. Pearse, Jr., Rochester, N. Y.—p. 242.
Thoracoplastic Surgery in Chronic Tuberculosis with Associated Empyema. W. H. Thearle, Los Angeles.—p. 247.
Nonparasitic Cysts of Spleen: Report of Patient Successfully Operated on. B. T. Tilton, New York.—p. 250.
*General Principles in Diagnosis of Injuries of Lower Back and Pelvis. J. M. Troutt, Hot Springs National Park, Ark.—p. 253.
Implantation of Fascia in Round Ligaments for Retrodisplacements of Uterus. A. P. Vastola, Waterbury, Conn.—p. 267.
Neurosurgery in Diseases of Urinary Bladder. J. R. Learmonth, Rochester, Minn.—p. 270.
Vesical Diverticulum in Female. L. P. Wershub, New York.—p. 275.
So-Called Essential Hematurias: Are They Chiefly Due to Ureteral Stricture? G. L. Hunner, Baltimore.—p. 279.
Gunshot Wounds of Urinary Bladder: Report of Two Cases. H. J. Shelley, New York.—p. 301.
*Can Benign Thyroid Tumors Metastasize? Review of Literature with Illustrative Case Report. M. Thorek and P. Thorek, Chicago.—p. 304.
Prolapse of Rectum: Contribution on Etiology and Treatment. S. D. Weinstein, Brooklyn.—p. 310.
Intestinal Obstruction. S. J. Waterworth, Clearfield, Pa.—p. 317.
Appendicitis in Children. J. J. Kirschenmann, Brooklyn.—p. 318.
*Stricture of Rectum, with Especial Reference to Stricture in the Colored Race: Report of One Hundred and Sixty Cases. H. T. Hayes, Houston, Texas.—p. 323.

Lesions of Sella Turcica.—Frazier states that, in the early days of the surgery of pituitary lesions, surgeons were wont to think mostly of the intrasellar adenoma, representing as it does unquestionably the most frequent of all lesions in this territory. As time progressed, their attention was drawn to many other tumors, which, because of their juxtaposition to the sella turcica, gave rise to endocrine symptoms of pituitary origin and to structural changes in the bony processes of the pituitary fossa. The author believes that the most satisfactory classification of the lesions under consideration is based on the pathologic histology of the lesion in question. On this basis he includes in his discussion of the differential diagnosis, supported by illustrative cases, (1) intrasellar adenoma, (2) suprasellar adenoma, (3) adenocarcinoma, (4) malignant adenoma, (5) adamantinoma, (6) teratoma, (7) ganglioneuroma, (8) suprasellar arachnitis (pseudotumor), and (9) suprasellar fibroblastoma.

Pyloric Exclusion.—Bancroft reports that Cole's modification of the Devine operation in a small series of cases has proved to have a low enough mortality and satisfactory enough end-results to warrant its use in postpyloric ulcers in which the ulcers are adherent to the pancreas or in the neighborhood of the papilla of Vater. Its use is advocated in patients who have been refractory to medical care and in those in whom there is no marked gastric retention.

Cecal Tumors.—According to Erdmann, carcinoma is the most frequent cecal tumor requiring surgical intervention. Lymphosarcoma is the most highly malignant tumor. Cecal carcinomas are slow growing and only moderately malignant. Secondary infection invades the tumor early and is the chief cause of the profound cachexia found in these cases. Distant metastases are rare in carcinoma of the cecum. Secondary intestinal growths are not uncommon and should always be sought for. A malignant tumor obstruction may simulate a chronic appendicitis.

Occlusion of Arteries.—Pearse attempted a method of partial occlusion of arteries with six to eight turns of heavy fascia. This amount of connective tissue was used in the hope of inducing enough scar tissue contracture to complete the obstruction. The method was used on the thoracic aorta of dogs in ten experiments and the abdominal portion below the renal vessels in six instances. With a plastic substance, such as tissue strips, it is difficult to judge the degree of constriction. Because of this, three animals were killed by too great obstruction of the thoracic aorta. In four instances the arterial wall atrophied and ruptured at the site of the constricting device. Rupture occurred in from seven to seventeen days after operation. In the remaining nine experiments, relaxation of the fascia invariably occurred. Restitution of the caliber of the lumen was partial in one month and complete in from two to three months. Resorption of the tissue bands occurred in from three to four months. The results of these experiments permit the conclusion that fascia is an unreliable and somewhat dangerous material to use for partial occlusion of the great vessels.

Injuries of Back and Pelvis.—Troutt emphasizes the fact that injury of the lower part of the back has great potentiality for disability. It is most important to correlate the history, symptoms, and laboratory observations in arriving at a diagnosis. It must be realized that the disability ascribed to sacroiliac and lumbosacral derangement of any, except extreme degree, has little beyond subjective symptoms to support the diagnosis.

Thyroid Tumors.—The Thoreks call attention to the fact that the power of metastasizing at a distance has generally been considered to be characteristic of primary malignant tumors. Nevertheless, certain primary benign connective tissue tumors, such as lipomas, myxomas and chondromas, as well as myeloid tumors, are capable of becoming generalized. Benign epithelial tumors rarely generalize, although when one considers the matter there does not appear to be any sufficiently adequate reason why they should not do so. The authors

report an instance of benign metastasizing adenoma of the thyroid with metastases in the neck and both lungs.

Rectal Stricture.—From the study of 160 cases of rectal stricture, Hayes concludes that this condition is nearly always inflammatory; that gonorrhea, in the Negro race at least, is the chief etiologic factor; and that the strictures occur much more frequently in Negro women than in any other race or sex. He believes that the scar-forming tendency of the Negro race is the real basis of the stricture formation in this race. There is only a slight tendency to stricture formation in the white and Mexican races. Syphilis seems to play an unimportant part in the formation of stricture of the rectum. As yet, treatment is unsatisfactory and the author feels that excision should be resorted to in the badly infected cases more often than it is at present.

Archives of Ophthalmology, Chicago

7: 661-830 (May) 1932

Electro-Endothermy in Detachment of Retina. S. Larsson, Stockholm, Sweden.—p. 661.
The Foundation of the New York Eye and Ear Infirmary. B. Samuels, New York.—p. 681.
*Myasthenia Gravis: New Diagnostic Eye Observations, with Possible Pathologic Significance. S. V. Abraham, Los Angeles.—p. 700.
Size and Shape of Ocular Images: II. Clinical Significance. E. H. Carleton and L. F. Madigan, Hanover, N. H.—p. 720.
Hyperphoria: Diagnosis and Treatment. J. W. White, New York.—p. 739.
*Extensive Iridodialysis: Operation, Reattachment: Report of Two Cases. B. W. Key, New York.—p. 748.
*Isolated Foci of Calcification in Sclera: Anatomic and Clinical Aspects. Bertha Klien-Moncreiff, Chicago.—p. 757.
Determination of Oxidation-Reduction Mechanism in Lens of Rabbits with Naphthalene Cataract. H. Gifford, Jr., Omaha.—p. 763.
Ophthalmology in Ukraine. E. Rabkin, Kharkow, Ukraine.—p. 769.
Chemical Burns of Eye. L. F. McAndrews, Philadelphia.—p. 779.

Myasthenia Gravis.—Abraham believes that in myasthenia gravis the irregularity in the amount and quality of the heterophoria in the short span of a few moments, the irregularity in duction readings, the unusually high duction readings, the close proximity of the images when diplopia is produced, the approximation of the amount of prism used in creating the diplopia, and the hyperphoria as measured by the Maddox rod test and the actual turning of the eye in the direction of the apex of the prism, indicating that the muscle stimulated does not "tire," permit of but one interpretation; namely, that the muscle or muscles stimulated contracted, but failed to relax promptly or completely, remaining in a prolonged contraction state. Such observations obtain in no other condition in which tests have been performed and therefore would seem of diagnostic value in this condition. From these observations the author is led to conclude that myasthenia gravis is not a true myasthenia.

Iridodialysis.—According to Key, the correction of iridodialysis by operative procedure offers an interesting problem in the analysis of the forces affecting incarceration of the iris for this purpose. He reports a case that demonstrates the degree of correction that may be secured by this simple operative technic: a pupil perfectly round and equal in size to that of the fellow eye, an active sphincter iridis, the base of the iris apparently reattached, the level of the iris almost normally maintained—in fact, no deformity and the visual efficiency restored. Another case demonstrates the result of fibrous contraction in the substance of the iris or of excessive incarceration of the iris following filtration of aqueous, which occurred after removal of the suture on the fourth day. Prior to this, the correction of the defect was in every respect as satisfactory as that in the first case. The pupil is displaced, but the deformity is improved and the vision may be restored following discission of the secondary membrane. While it is quite obvious that this simple operative procedure requires some delicacy in technic, which must be emphasized, it is neither difficult nor uncertain in its performance. The hazard of operation is in direct proportion to the extent and location of the defect and should be measured in terms of the deformity and the probable improvement in the visual efficiency.

Calcification in Sclera.—Klien-Moncreiff reports that in two histologically studied eyes from very old persons, one removed because of recurrent uveitis and secondary glaucoma, the other because of endophthalmitis and beginning atrophia bulbi, there were localized, well defined foci of calcareous degeneration within portions of the sclera completely devoid of nuclei, indicative of a primary necrosis of the sclera. The identical location of these calcified areas anterior to the tendinous insertions of the lateral recti in these cases and also in other cases previously reported by other writers indicates that, in addition to chronic disease or old age, mechanical factors may well be predisposing causes for this localization of the calcified lesions. The discovery of hard, resistant and apparently calcified scleral tissue adjoining the limbus in three surgical cases outlined shows that this condition is not without some clinical importance.

Canadian Medical Association Journal, Montreal

26: 519-648 (May) 1932

*Renal Insufficiency in Essential Hypertension. L. G. Bell, Winnipeg, Manit.—p. 525.
*Surgical and Clinical Study of Nine Cases of Chronic Subdural Hematoma. K. G. McKenzie, Toronto.—p. 534.
Yeast Infection in Man: Report of Case. R. S. Saddington, Toronto.—p. 544.
Lead Poisoning in Children. H. S. Mitchell, Montreal.—p. 546.
Regeneration of Distal Phalanx. L. H. McKim, Montreal.—p. 549.
*Influence of Infection on Reaction of the Diabetic to Insulin Treatment: Report of Unusual Case. I. M. Rabinowitch, Montreal.—p. 551.
Cavity Formation in Its Relation to Prognosis and Treatment in Pulmonary Tuberculosis. T. G. Heaton, Toronto.—p. 554.
Treatment of Ureteral Calculi, with Analysis of Two Hundred Cases. E. C. Smith, Edmonton, Alta.—p. 560.
Significance of Infection in Cardiovascular Disease. E. P. Scarlett, Calgary, Alta.—p. 562.
Diphtheria and Acute Toxin Encephalitis: Report of Case. W. E. B. Hall, Philadelphia.—p. 566.
Fifteen Years' Experience with Radium. E. S. Hicks, Brantford, Ont.—p. 569.
Types of Diseases Treated During Five Year Period at Brandon Mental Hospitals. S. Schultz, Brandon, Manit.—p. 572.
"Avertin" Ethylene Anesthesia. W. B. Neff, Montreal.—p. 576.

Renal Insufficiency in Essential Hypertension.—Bell calls attention to the fact that, in a small percentage of cases of essential hypertension, renal insufficiency ensues and death occurs in uremia. These cases may take the form of a gradual obliteration of the renal parenchyma because of arteriolosclerosis, or they may exhibit a rapid course as the result of necrosis of the afferent arterioles. The essential difference between benign and malignant nephrosclerosis is probably one of time. Malignant nephrosclerosis may be regarded as an acute arteriolosclerosis. Some cases show grades of severity intermediate between the benign and the malignant forms.

Subdural Hematoma.—McKenzie believes that patients with subdural hematoma should be operated on by removal of the contents of the hematoma by suction through a small bone opening. The exception to this rule is when a case is encountered in which there is a solid clot. The cavity should be filled with physiologic solution of sodium chloride and drainage established with a good-sized tube. This allows the saline solution to escape and permits complete expansion of the brain and obliteration of the cavity. The use of a large osteoplastic flap is usually unnecessary and may be dangerous, especially if the case should prove to present a bilateral hematoma. It is not necessary to remove the outer or inner membrane of the hematoma. The localizing signs are often confusing or entirely absent, so that a ventriculogram or one or more exploratory burr holes is frequently necessary.

Infection and Insulin.—Rabinowitch reports a case in which a man, aged 64, with a history of diabetes of three years' duration and with the disease complicated by cardiovascular-renal disease and prostatic enlargement with cystitis and pyuria, was admitted to the hospital in a state of a precoma. Following the usual treatment of this condition, he was given a high-carbohydrate low-fat diet, and about three weeks after admission was exposed to a cystotomy and eleven days later to enucleation of the prostate. In spite of the advanced stage of the diabetes on admission and exposure to the injury associated with these two operations, including ether anesthesia, it was possible to discontinue the use of insulin entirely before the patient left the hospital, though the carbohydrate content of the diet was over 200 Gm. While improvement of carbohydrate tolerance is not an uncommon phenomenon following recovery from conditions that tend to lower tolerance, it has usually been noted in relatively mild diabetes. In the author's experience, this is the first case associated with the disease when the con-

dition has reached the stage of coma. Of additional interest is the fact that the patient was treated with the high-carbohydrate low-fat diet.

Endocrinology, Los Angeles

16: 225-336 (May-June) 1932

*Recent Advances in Physiology of Reproduction in Relation to Zondek-Aschheim Test for Early Detection of Pregnancy. B. Parvey, Boston.—p. 225.
*Functional Relations of Hypophysis and Brain. W. J. Atwell, Buffalo.—p. 242.
*Renal Function in Exophthalmic Goiter and Myxedema. J. Lerman and A. J. Brogan, Boston.—p. 251.
Technic for Hypophysectomy of Rat. K. W. Thompson, Boston.—p. 257.
*Thyroid Hormone in Blood and Urine in Graves' Disease: Preliminary Paper. L. R. Himmelberger, Flint, Mich.—p. 264.
Studies on Extraction of Testicular Hormone from Tissues and on Its Quantitative Distribution Therein. E. B. Womack and F. C. Koch, Chicago.—p. 267.
Testicular Hormone Content of Human Urine. E. B. Womack and F. C. Koch, Chicago.—p. 273.
Ovariectomy and Corpus Luteum Extract Studies on Rats and Ground Squirrels. G. E. Johnson and Joanna Seiler Challans, Manhattan, Kan.—p. 278.
Addison's Disease Successfully Treated with Cortin and Adrenal Cortex Extract: Case. J. Horák, Brno, Czechoslovakia.—p. 285.
*Posterior Pituitary Therapy in Diabetes Insipidus. B. Vidgoff, Portland, Ore.—p. 289.
*Epileptoid Attacks and Hyperinsulinism: Report of Case. B. E. McGovern, New York.—p. 293.

Zondek-Aschheim Pregnancy Test.—On the basis of a review of the recent advances in the physiology of menstruation and pregnancy, Parvey draws the following conclusions: 1. Folliculin is an important factor in the building up of the basal layer of the uterine endometrium in the first stage of menstruation. The presence of the corpus luteal hormone is responsible for further development of this endometrium, and, as a result, a diminution of the same hormone, desquamation and extravasation of the endometrium occur. 2. The persistence of the action of the corpus luteal hormone results in the development of the endometrium into the decidua and in the first months is indispensable to pregnancy. The termination of parturition is probably brought about by a diminution or disappearance of the corpus luteal hormone. An increase of this hormone in the late months results in prolongation of pregnancy. 3. The hormone of the anterior pituitary body is increased in the blood and urine in pregnancy and acts as a stimulus for the production of the corpus luteum. The excretion of this pituitary hormone in the urine, and for this reason the capacity of such urine when injected into rodents to produce characteristic changes in the ovaries, has led to a simple and reliable test for pregnancy. The author reviews the historical development of contributions relating to recent advances in the physiology of reproduction and presents the basis of the Zondek-Aschheim test for the early diagnosis of pregnancy. He applied the test with excellent results in 370 cases and these are tabulated. A brief outline of technic is given.

Hypophysis and Brain.—Atwell presents a critical review of current views concerning the functional relationships of the pituitary and the brain. He holds that adequate proof of many of these views is lacking and that there has been a confusion of propinquity with functional association. Experiments on amphibia indicate that contact of brain and pituitary fundament is necessary for the early development and differentiation of the pars intermedia but not for the later functioning of this lobe. The adiposity of Fröhlich's syndrome is probably due to suprasellar disturbances involving the hypothalamus or the pars tuberalis, or both; genital infantilism is apparently due to lack of one of the hormones of the anterior lobe. The author considers evidence indicating the possible participation of the pars tuberalis in the production of diabetes insipidus.

Renal Function in Exophthalmic Goiter and Myxedema.—In a study of the phenolsulphonphthalein excretion of seventy-five patients with exophthalmic goiter and twenty-two patients with myxedema, Lerman and Brogan found that renal function in the former varies with age; i. e., up to the age of 50 the function is more or less constant, but after 50 it diminishes rapidly. The renal function of myxedema patients is slightly but consistently lower than that of exophthalmic goiter patients in all age groups except in the group 60 years and over. The function in both diseases is probably within normal limits. The slight differences are adequately accounted for by the antithetical circulatory conditions. There is no relationship between the degree of phenolsulphonphthalein excretion in exophthalmic goiter and myxedema and the basal metabolic rate or the degree of anemia. There is a slight relationship between phenolsulphonphthalein excretion and pulse pressure in myxedema only. The data presented offer no support to the concept that permeability of renal tissue is significantly altered in hyperthyroidism or myxedema.

Exophthalmic Goiter.—Himmelberger reports that when the blood serum or urine from patients with exophthalmic goiter is injected into mice a substance capable of disturbing liver function can be demonstrated. In the limited number of cases studied, the presence of the hormone paralleled the presence of lymphoid tissue in the resected thyroids, thus lending further support to the view that lymphoid areas are an essential part of the pathologic picture in exophthalmic goiter. It is suggested that the demonstration of this hormone in urine or blood serum might be useful as an aid in differential diagnosis and also prove to be of value in the experimental study of exophthalmic goiter.

Diabetes Insipidus.—Vidgoff states that prolonged study in a single subject indicates that desiccated posterior pituitary in powder form applied to the nasal mucosa gives satisfactory relief from the symptoms of diabetes insipidus. The urinary secretion, qualitatively and quantitatively, returns to normal figures. The nasal mucosa is not damaged by the local application of powdered pituitary substance in sufficient quantity to afford complete relief from the symptoms of the disease. The quantity of pituitary substance necessary to afford complete relief is less, in powder form, than the amount required by hypodermic injection of an extract or nasal application of an extract in jelly base.

Epileptoid Attacks and Hyperinsulinism.—A patient exhibiting symptoms of hyperinsulinism was closely observed by McGovern over a period of several years. The chief indications of the disorder were frequent attacks of amnesia and coma, which occurred usually in the forenoon and were often accompanied by convulsions, and during which the blood sugar content fell to 30 mg. per hundred cubic centimeters. Treatment such as phenobarbital, bromides and other sedatives, as well as the Peterman ketogenic diet, failed to prevent the attacks, for which reason epilepsy was excluded as the etiologic factor. Solution of pituitary promptly restored consciousness during the individual attacks, but for this purpose epinephrine plus dextrose given intravenously gave best results. Carbohydrate given every hour during the forenoon has kept the patient free from attacks for about a year and a half.

Illinois Medical Journal, Chicago

61: 361-452 (May) 1932

Medical Societies Can Operate Their Own Special Clinics. C. P. Blair, Monmouth.—p. 412.
*Surgical Limitations in Gastric Syphilis. G. de Tarnowsky, Chicago.—p. 414.
Proctology: Clinical Summary of Four Thousand and Sixteen Proctoscopic Examinations. M. H. Streicher, Chicago.—p. 418.
*Chronic Nontuberculous Diseases of Lung, with Report of Case of Fungous Infection of Lung, Probably the Sporotrichum Schenckii. A. Egdahl, Rockford.—p. 422.
The Doctor Looks at Business. J. D. Ellis, Chicago.—p. 426.
Large Spontaneous Abscess of Liver with Rupture Into Pericardium. A. J. Azar, Elgin.—p. 428.
*Hay Fever in North Central States: Its Cause and Treatment. S. M. Feinberg, Chicago.—p. 429.
Whooping Cough: Laboratory Diagnosis. L. W. Sauer, Evanston.—p. 433.
*Silent Endocarditis. D. C. Sutton, Chicago.—p. 438.
Acute Spinal Cord Degeneration: Case Report. W. A. Frymire, Monmouth.—p. 439.
Practical Use of Thymophysin in Obstetrics. E. Jonas, Chicago.—p. 443.
Combined Trypaflavine Quartz Light Treatment of Psoriasis Vulgaris: Report of One Hundred and Eleven Cases Thus Treated. S. J. Zakon, Chicago.—p. 444.
Agranulocytic Angina. H. V. Gould, Chicago.—p. 447.

Surgical Limitations in Gastric Syphilis.—De Tarnowsky reports three cases of gastric syphilis. He believes that, with routine Wassermann-Kahn tests and proper roentgenographic interpretation, the diagnosis of this condition should not be difficult. A marked disproportion between the extent of the pathologic picture, as interpreted by the roentgenogram, and lack of cachexia with loss of weight, are almost pathognomonic.

Antisyphilitic treatment should be given a trial in all cases and persisted in as long as clinical improvement is manifest. Pyloric obstruction constitutes the sole indication for operative intervention; posterior gastro-enterostomy and, exceptionally, pyloroplasty are the only justifiable procedures.

Chronic Nontuberculous Diseases of Lung.—Egdahl believes that infection of the lungs with the different types of fungi is more common than generally supposed. Infection of the lung with the specific type of fungus, Sporotrichum schenckii, is extremely rare. The pathologic changes in the lung produced by all these different types of filamentous fungi are of the nature of granulomatous changes. The pathologic changes are not characteristic of any particular type of fungus. To make a definite diagnosis of the infective agent in these cases, it is necessary to study the microscopic and cultural characteristics of the fungus, and at times also the action on animals. In a case of pulmonary disease of undetermined etiology, and after repeated search for tubercle bacilli in the sputum, one should examine for the presence of a fungus. If found it may solve the diagnosis, and the patient may benefit by appropriate treatment.

Hay Fever.—Feinberg emphasizes the fact that for the study and successful management of any case of hay fever one must have first hand knowledge of the hay fever plants in his district. Complete pollen tests are necessary for conscientious work. The routine use of skin tests for substances other than pollen will augment the results and minimize the failures. The preferable method of treatment is the long preseasonal scheme, although the short interval method and the coseasonal method may also bring good results. The perennial method of treatment in patients who have already been treated for one season offers additional advantages. Systemic reactions may be minimized by certain precautions. The maximal results may be obtained by the use of correct and potent pollen, properly preserved and administered according to individual indications, and by attention to complicating sensitizations.

Silent Endocarditis.—Sutton describes a case in which a mitral valve lesion developed entirely without symptoms except a tachycardia. He calls attention to the fact that an endocarditis may involve a new valve in the presence of a chronic valvular disease, without giving any external evidence. With a preceding chronic valvulitis of the mitral valve, new involvement of the aortic valve has been observed a number of times, and of the tricuspid valve twice. Attention is also called to the importance of fatigue as the first evidence of, and preceding by a long interval, definite evidences of bacterial endocarditis.

Indiana State Medical Assn. Journal, Fort Wayne

25: 205-244 (May) 1932

Dietary of Childhood Tuberculosis: Cereal as a Source of Added Mineral and Vitamin Elements: Preliminary Report. P. D. Crimm, Evansville.—p. 205.

Fewer and Better Babies (from Viewpoint of Eugenic Sterilization). C. O. McCormick, Indianapolis.—p. 206.

Cardiorenal Syndrome: Discussion of Arteriosclerosis, Hypertension and Chronic Nephritis. C. E. Briscoe, New Albany.—p. 214.

Cerebrospinal Rhinorrhea: Report of an Unusual Case. H. C. Wurster, Mishawaka.—p. 218.

Partial Abruptio Placentae: Case Report. F. T. Younker, Bremen.—p. 221.

Traumatic Injury to Kidney: Report of Two Similar Cases Due to Violence Sustained in Football. P. A. Campbell, Culver.—p. 221.

Johns Hopkins Hospital Bulletin, Baltimore

50: 305-356 (May) 1932

*Calcium and Phosphorus Studies: IV. Relation of Calcium and Phosphorus of Diet to Toxicity of Viosterol. D. H. Shelling and Dorothy E. Asher, Baltimore.—p. 318.

Id.: V. Comparative Effectiveness of Viosterol and Cod Liver Oil in Protecting Body Against Calcium Deficiency in Diet. D. H. Shelling and Dorothy E. Asher, Baltimore.—p. 344.

Calcium and Phosphorus Studies.—Shelling and Asher describe experiments in which they demonstrated that the calcium and phosphorus content of the diet is a determining factor in viosterol toxicity in rats. Optimal calcium-high phosphorus diets are the most predisposing to the injurious effects of viosterol; and high calcium-low phosphorus and very low calcium-optimal phosphorus diets are the least effective. On the stock diet in which the calcium and phosphorus content is optimal, dosages of viosterol several hundred to a thousand times the therapeutic dose produce no detectable injurious effects when fed for long periods. On this diet, the therapeutic dose is quite remote from the toxic level. Metastatic calcification is not the sole injurious effect of viosterol, for necrotic, degenerative and inflammatory changes without calcification occur in the soft tissues when large doses of viosterol are used. Small or moderate doses of viosterol cause resorption of lime salts from the bones. The arterial calcification produced by viosterol is of a specific type and is limited chiefly to the media, as in Mönckenberg's sclerosis, rather than to the intima, as in arteriosclerosis. Viosterol is capable of raising the serum calcium to hypercalcemic levels when calcium is entirely absent from the diet and to elevate it from hypocalcemic levels produced by high phosphorus feeding.

Journal of Bacteriology, Baltimore

23: 281-354 (April) 1932

Biology of Tubercle Bacillus: II. Asparagin and Glycerin Metabolism of Tubercle Bacillus. J. H. Dingle and J. Weinzirl, Seattle.—p. 281.

Observations on Bacillus Coagulans. W. B. Sarles and B. W. Hammer, Ames, Iowa.—p. 301.

Comparative Studies on Natural and Acquired Resistance of Certain Strains of Escherichia Coli to Bacteriostatic and Germicidal Effects of Cations. E. K. Borman, Lexington, Ky.—p. 315.

Improved Method for Cultivation of Anaerobic Micro-Organism. L. G. Herrmann, Cleveland.—p. 331.

Two New Species of Bacteria Causing Mustiness in Eggs. M. Levine and D. Q. Anderson, Ames, Iowa.—p. 337.

Marine Bacteria Commonly Found on Fresh Fish. J. R. Sanborn, Glens Falls, N. Y.—p. 349.

Improved Reagent for Acetyl-Methyl-Carbinol Test. E. Leifson, Baltimore.—p. 353.

Journal of Biological Chemistry, Baltimore

96: 285-571 (May) 1932. Partial Index

Antirachitic Activation of Ergosterol in Absence of Oxygen. H. H. Beard, R. E. Burk, H. E. Thompson and H. Goldblatt, Cleveland.—p. 307.

Factors Influencing Distribution and Character of Adipose Tissue in Rat: II. Effect of Ovariectomy and Feeding with Thyroxine. Lucille L. Reed, W. E. Anderson and L. B. Mendel, New Haven, Conn.—p. 313.

Strophanthin: XXV. Allocation of Lactone Group of Strophanthidin and Related Aglucones. W. A. Jacobs and R. C. Elderfield, New York.—p. 357.

Relation of Glycogen to Water Storage in Liver. H. L. Puckett and F. H. Wiley, Ann Arbor, Mich.—p. 367.

Id.: E. M. MacKay and H. C. Bergman, La Jolla, Calif.—p. 373.

Id.: Reply to Communications of Puckett and Wiley, and MacKay and Bergman. E. M. Bridge and E. M. Bridges, Baltimore.—p. 381.

Effects of Carotene and Vitamin on Oxidation of Linoleic Acid. Betty R. Monaghan and F. O. Schmitt, St. Louis.—p. 387.

*Alleged Increase in Plasma Fats After Injection of Epinephrine. C. N. H. Long and Eleanor M. Venning, Montreal, Canada.—p. 397.

Determination of Magnesium in Blood with 8-Hydroxyquinoline. D. M. Greenberg and Myrtle A. Mackey, San Francisco.—p. 419.

Nature of Sugar of Normal Urine: I. The Phenylosazones. M. R. Everett and Fay Sheppard, Oklahoma City.—p. 431.

Intestinal Nucleotidase and Polynucleotidase. P. A. Levene and R. T. Dillon, New York.—p. 461.

Further Evidence for Existence of a Third Vitamin B Growth Factor for the Rat, Probably Vitamin B_4. Nellie Halliday, with assistance of Margaret J. Nunn and Jennie D. Fisher, East Lansing, Mich.—p. 479.

*Validity of Determinations of Colloid Osmotic Pressure of Serum. A. H. Turner, Copenhagen, Denmark.—p. 487.

*Studies on Magnesium Deficiency in Animals: I. Symptomatology Resulting from Magnesium Deprivation. H. D. Kruse, Elsa R. Orent and E. V. McCollum, Baltimore.—p. 519.

*Studies on Iron Metabolism and Influence of Copper. H. W. Josephs, Baltimore.—p. 559.

Epinephrine: Effect on Plasma Fats.—Long and Venning believe that owing to the fact that, during saponification of alcohol-ether extracts of plasma the dextrose present breaks down to organic acids, the methods of Stewart and White and of Himwich, Friedmand and Spiers are of no value for the estimation of the true plasma fatty acids. A second source of error in these methods is the inclusion by them as "fatty acids" of the phosphoric acid liberated by the hydrolysis of phospholipids. The results obtained by certain workers on the increase in plasma fatty acids after the injection of epinephrine, nocuous stimulation, and fright are in all cases to be largely attributed to the concomitant increases in blood sugar. Analyses of the plasma by a method free from these errors led to different conclusions in all cases that the authors have examined.

Colloid Osmotic Pressure of Serum.—In order to test the reliability of colloid osmotic pressure determinations on

serum or plasma, many different membranes were tried by Turner in the Krogh and Nakazawa osmometer. With horse serum as an inner liquid and either in its ultrafiltrate or 0.9 per cent solution of sodium chloride as outer liquid, identical results were obtained for the colloid osmotic pressure with the protein-tight membranes Ultrafeinfilter (Zsigmondy) of 110 and 120 minutes, cellophane No. 600, and the prepared cecum of the rabbit known as fish bladder. This identity of result with such diverse membranes indicates that, since the proteins are known to be held back, the membranes must make such an adjustment of the other serum constituents that the true colloid osmotic pressure is satisfactorily determined by this relatively simple method. The identity of result, further, makes highly improbable any distortion of the readings by electrical properties of the membranes.

Magnesium Deficiency in Animals.—Kruse and his associates successfully prepared a diet containing only 1.8 parts per million of magnesium but otherwise adequate. When young rats are deprived of magnesium by restriction to this diet, they present a characteristic symptom complex which is terminated by early death. The symptom complex comprises vasodilatation, hyperirritability of the nervous system, cardiac arrhythmia, spasticity, and tonic-clonic convulsions. From a discussion of the pathogenesis and manifestations of tetany, the authors suggest that the syndrome produced by magnesium deficiency constitutes tetany. Tetany induced by deprivation of magnesium possesses one symptomatic feature differentiating it from other known types; namely, the vasodilatation. Anorexia and inanition are shown not to be responsible for the syndrome. It is established that magnesium is an essential element for certain bodily activities, growth and life.

Iron Metabolism and Influence of Copper.—Josephs studied the retention of iron and its partition between the hemoglobin and the tissues in rats. It was found that during the nursing period the retained iron was sufficient to account for the gain in hemoglobin, but that, if a diet of milk was continued beyond the nursing period, all the retained iron went to maintaining the tissue iron at a constant minimal concentration which is considered to represent the "function iron" of the tissues. When extra iron was given, this was divided between the hemoglobin and the tissues, most of it going to hemoglobin formation. When copper was given, a larger proportion of the retained iron went to form hemoglobin, the tissue iron was reduced in amount, and the reduction was carried down to but not below the level of concentration that was considered to represent the function iron of the tissues. Copper had no effect on iron retention.

Journal of Nervous & Mental Disease, New York

75: 473-600 (May) 1932

Epilepsy and Congenital Syphilis. K. A. Menninger and W. C. Menninger, Topeka, Kan.—p. 473.
The Neurotic Criminal. P. Getson, Philadelphia.—p. 498.
Cortical Centers of Labyrinth. E. Spiegel, Philadelphia.—p. 504.
I. Preepidemic Encephalitis Lethargica: II. Case Occurring Here in 1906. W. Browning, Brooklyn.—p. 513.
Neuropsychiatric Manifestations and Their Interpretation in Carbon Monoxide Intoxication. A. Gordon, Philadelphia.—p. 520.

Kansas Medical Society Journal, Topeka

33: 149-186 (May) 1932

Acute Laryngotracheitis in Children. H. L. Dwyer, Kansas City, Mo. —p. 149.
Nonsuppurative Osteomyelitis: Presentation of Case of Serous Osteomyelitis. C. B. Francisco and G. M. Tice, Kansas City.—p. 151.
Another Case of Foreign Bodies in Stomach. H. B. Latimer.—p. 154.
Diagnosis and Treatment of Syphilitic Aortitis. D. C. Peete, Kansas City, Mo.—p. 156.
*Generalized Fetal Edema (Hydrops Fetus Universalis): Report of Case. R. R. Wilson and F. C. Helwig, Kansas City, Mo.—p. 158.
Correction of Vesical Neck Obstructions by Means of Resectoscope. N. F. Ockerblad, Kansas City, Mo.—p. 163.
Interpretation of Some Common Neurologic Tests: The Reflexes. B. L. Elliott, Kansas City, Mo.—p. 168.
*Effect of Morphine on Intestine. H. E. Carlson and T. G. Orr, Kansas City, Mo.—p. 171.

Generalized Fetal Edema.—In a series of 2,797 births, Wilson and Helwig observed generalized fetal anasarca in three instances, an incidence of approximately 1 in 1,000 deliveries. They report a case in which a striking degree of fetal edema was present and caused difficulties in the delivery.

Effect of Morphine on Intestine.—According to Carlson and Orr, morphine increases the tone of the jejunum, the amplitude and frequency of peristalsis, and the amplitude of segmentation movements as shown experimentally on the dog. They report a hospital case of morphine poisoning in which good intestinal movements could be heard on auscultation. It is suggested that the beneficial effects of morphine in the treatment of peritonitis, as known clinically, is probably due to the maintenance of good intestinal tone and good contractions, which aids in the prevention of paralytic ileus or which may effect its early cure. The authors consider that it is doubtful whether atropine sulphate in combination with morphine should be used in the treatment of peritonitis, paralytic ileus or intestinal obstruction, since it tends to decrease the tone of the intestine.

Medical Journal and Record, New York

135: 417-460 (May 4) 1932

High Blood Pressure Not a Calamity. R. H. Rose, New York.—p. 417.
Postoperative Hyperventilation. C. E. Haines, New Rochelle, N. Y.—p. 419.
Guinea-Pig Test and Biopsy in Early Diagnosis of Articular Tuberculosis. M. B. Cooperman, Philadelphia.—p. 420.
Bactericidal Power of Antitoxins and Its Limitations: Clinical and Bacteriologic Study. F. Herb, Chicago.—p. 422.
Pressure Test as an Aid in Clinical Diagnosis of Bronchial Asthma. A. H. Fineman, New York.—p. 425.
Possible Relationship Between Dental Decay and General Health. C. F. Bodecker, New York.—p. 426.

Medicine, Baltimore

11: 141-262 (May) 1932

*Review of Experimental Studies of Nonspecific Inhibition of Anaphylactic Shock. Justina H. Hill and L. Martin, Baltimore.—p. 141.
*Control of Tonus After Injuries to Brain or Spinal Cord of Man. O. R. Langworthy, Baltimore.—p. 225.

Nonspecific Inhibition of Anaphylactic Shock.—In their review of experimental studies of the nonspecific inhibition of anaphylactic shock, Hill and Martin found no facts or any theory that will explain conclusively the definite nonspecific inhibition of anaphylactic shock that is produced by a variety of agents. The theory most in vogue at present is that of changes of colloidal equilibrium. Such changes, involving an increased viscosity and lowered surface tension of the blood, have been shown to have been brought about by certain mineral waters and by ether or chloroform given intravenously. It seems probable also that many of the agents studied cause such changes, although they have not been studied from this point of view.

Control of Tonus After Injuries to Brain or Spinal Cord.—According to Langworthy, injuries to the central nervous system of man often produce marked abnormalities of tone in the striated musculature of the body. He discusses the specific changes after lesions in certain definite portions, such as the spinal cord or the cerebellum. Two common abnormalities, showing as prominent symptoms increased tonus, hemiplegia and Parkinson's disease, are analyzed from the points of view of recent studies of the physiology of tone.

New England Journal of Medicine, Boston

206: 925-978 (May 5) 1932

*Present Day Review of Gastric and Duodenal Ulcer. R. H. Miller, Boston.—p. 925.
Color Photography of Pathologic Specimens. G. A. Moore, Brockton, Mass.—p. 934.
Syphilis of Liver Simulating Acute Surgical Abdomen: Case. A. Feldman, Boston.—p. 937.
Coordination of Community's Health Services. L. I. Dublin, New York. —p. 938.
Need of Occupational Therapy for Cardiac Patients. P. D. White, Boston.—p. 942.
New Instrument for Intestinal Anastomosis. E. L. Young, Jr., Boston. —p. 943.
Some Surgical Aspects of Hepatic Cirrhosis and Splenomegaly. A. T. Bazin, Montreal, Canada.—p. 946.

Gastric and Duodenal Ulcer.—According to Miller, gastric and duodenal ulcers are principally initiated and maintained by disturbances in the acid-alkali balance, and these in turn are due to malfunction of the pylorus, more particularly failure of proper relaxation (achalasia) to allow regurgitation of alkaline duodenal contents. Any treatment must take this into consideration. Gastric ulcer must be carefully watched,

to be sure it is not cancer. If it is as large as a 25 cent piece (25 mm.), one should be highly suspicious. In case of doubt, operation is indicated. Duodenal ulcer may be treated medically until the patient elects surgery, and then the simplest reasonable operation should be done. In hemorrhage from ulcer, operation should be undertaken only as the last resort.

206: 979-1026 (May 12) 1932

*Carcinoma of Rectum: Report of Eighteen Radical Resections, with Historical Review. E. P. Hayden, Boston.—p. 979.
Hemophilia: Anaphylactic Treatment of Acute Emergencies by Passive Sensitization: Report of Case. R. C. Eley, Boston.—p. 998.
Can Vital Statistics Be Used to Measure Quality of Maternity Care? J. R. Miller, Hartford, Conn.—p. 999.

Carcinoma of Rectum.—According to Hayden, it is now an established fact that an individual with cancer of the rectum, if operated on reasonably early by one of several extensive procedures, and in the hands of a competent surgeon before, during and after the operation, has an excellent chance of not only leaving the hospital but of being cured. This fact, though well known to those most closely concerned with this type of work, is doubted by a great many physicians because of their own experiences with rectal cancer. No man in general practice, even the busiest, sees many cases of this condition, for they do not appear with great frequency even in a large hospital. It is also a fact that a radical operation, applied to a patient who is further advanced in the disease but still operable, will give him a chance of cure, and if he is not cured he will have a much happier, and a longer, duration of life than if treated in other ways. A combined abdominoperineal resection in one stage with permanent colostomy, as described by Miles, is acknowledged by the surgeons with widest experience in this field to give the best chance of cure. A two-stage procedure, by one of several methods but with the same degree of block dissection, is a necessary adjunct in keeping the mortality down to a reasonable figure and extending the scope of the operation to include the less favorable cases. The author presents a brief review of the evolution of these operations, together with an analysis of eighteen personal cases, some of which illustrate points of especial interest.

New Jersey Medical Society Journal, Orange

29: 291-376 (April) 1932

Tonsil Problem. C. Brown, Kearny.—p. 291.
Symptomatology and Treatment of Thymus Gland Conditions in Children. P. H. Hosp, Newark.—p. 295.
Fatal Poisoning with Oil of Wintergreen. F. W. Lathrop, Plainfield.—p. 303.
Treatment of Heredosyphilis. F. J. McCauley, Newark.—p. 306.
Influenzal Meningitis: Report of Recovery. F. C. Johnson, New Brunswick.—p. 311.
Important Factors in Surgery of Acquired and Congenital Facial Deformities. J. W. Maliniak, Newark.—p. 314.
Hemorrhages in Vitreous of Young People. C. F. Adams, Trenton.—p. 323.
Functional Disturbances of Heart. H. R. Livengood, Elizabeth.—p. 325.
Spontaneous Dislocation. L. Greenberg, Hackensack.—p. 327.
Banti's Disease: Report of an Interesting Case. D. Polowe, Paterson.—p. 330.
Food Poisoning: Report of Forty Cases. F. C. Dinge and Phyllis Stanley, Newark.—p. 333.
Use of Insulin in Tuberculosis: Preliminary Communication. F. M. Allen, Morristown.—p. 335.

New Orleans Medical and Surgical Journal

84: 841-930 (May) 1932

*Infectious Mononucleosis: Glandular Fever. S. Hobson, New Orleans.—p. 841.
Results of Work Done on Fractures of Patella for Past Thirty-Six Years, with Conclusions. E. D. Martin, New Orleans.—p. 846.
Allergic Diseases, with Especial Reference to Those Involving Respiratory Tract. J. P. Henry, Memphis, Tenn.—p. 849.
Painful Feet. E. Hyman, New Orleans.—p. 861.
Esophageal and Gastric Varices. A. E. Gordin, Jackson, Miss.—p. 865.
Congenital Obstruction (Atresia) of Biliary Passage: Report of Case. H. C. McLeod, Hattiesburg, Miss.—p. 868.
Right Side of Abdomen from Surgical Standpoint. J. F. Armstrong, Jackson, Miss.—p. 871.
Pyelographic Studies with Emulsified Light Brominol. W. A. Reed and W. F. Henderson, New Orleans.—p. 876.
Nonunion of Fractures. G. C. Battalora, New Orleans.—p. 879.

Infectious Mononucleosis.—Hobson states that glandular fever is a fairly well defined symptom complex, infectious in origin, of unknown etiology, generally of short duration, and characterized by fever and large lymph nodes, sore throat and the occurrence of numerous abnormal blood cells. Neither the causal organism nor its portal of entry has been proved nor have the pathologic changes been sufficiently studied, even though numerous descriptions of lymph nodes excised during the course of the disease appear in the literature. The symptomatology is similar to that of acute infectious disease. The only physical sign that may be of value in reaching a differential diagnosis is that of the enlarged tender lymph node usually occurring in the region of the neck. At the onset of the disease total leukocytic counts are usually above normal, and during convalescence they are below normal. In some cases the increase in the polymorphonuclear leukocytes occurs at the onset. Sometimes during the course of the disease the blood shows a rather marked increase in abnormal mononuclear cells, some of which abnormal cells are lymphoid in nature while others are monocytes or endothelial leukocytes. The diagnosis of glandular fever is often difficult because of its resemblance to other acute infections and because so many mild cases are encountered. Even though the question of the symptom complex as a distinct entity remains open, the best name for the condition seems to be glandular fever.

Northwest Medicine, Seattle

31: 153-208 (April) 1932

*A Hopeful View of Asthma. R. L. Benson, Portland, Ore.—p. 153.
Acrodynia: Swift's Disease. J. B. Bilderback, Portland, Ore.—p. 161.
Vitamin B Complex: Its Rôle in Infant Feeding in Light of Our Present Knowledge. S. G. Henricke, Portland, Ore.—p. 165.
Use of Subcutaneous Injections of Oil in Infant Nutrition. R. G. Hall, Portland, Ore.—p. 170.
Blood Transfusion in Infancy: Review of Literature, with Especial Reference to Technic and Indications. H. E. Goldsmith, Portland, Ore.—p. 174.
Cerebral Hemorrhage in the New-Born: Its Successful Treatment. N. W. Clein, Seattle.—p. 179.
Whooping-Cough: Use of Vaccine in Its Treatment. M. L. Bridgeman, Portland, Ore.—p. 181.
Treatment of Erysipelas, Diphtheria and Scarlet Fever. J. H. Wells, Portland, Ore.—p. 183.
Lipoid Nephrosis. H. H. Skinner, Yakima, Wash.—p. 185.
Protozoal Infestations of Children: Study in an Orphanage in Oregon. W. B. Owen, Laramie, Wyo.—p. 186.
Nonoperative Skeletal Traction for Reduction of Certain Fractures: New and Effective, but Simple and Inexpensive Method. E. P. Quain, Bismarck, N. D.—p. 188.
Intestinal Obstruction Due to Prolapse of Bowel Through Preformed Opening in Omentum. E. H. McLean, Oregon City, Ore.—p. 193.

Asthma.—According to Benson, the first consideration in a frank case of asthma is to obtain prompt relief for the patient's attacks. Accordingly, diagnosis and treatment must go hand in hand. If attacks are present they must be relieved first by epinephrine, ephedrine, atropine or other specific drug therapy, but never with morphine. The only indication for the latter drug is the desire for temporary relief during cutaneous testing without the use of epinephrine and ephedrine, both of which inhibit the skin reactions. Otherwise, morphine has no place in asthma treatment, as $\frac{1}{100}$ grain (0.6 mg.) of atropine acts effectively without morphine and is not attended by the deleterious after-effects. As soon as feasible, the patient is started on a regular regimen of medication, consisting of sodium iodide, tincture of belladonna, and sometimes solution of potassium arsenite and tincture of nux vomica. With the use of these common remedies the attacks are often promptly ameliorated, making the further use of epinephrine and ephedrine unnecessary and allowing the regular diagnostic routine to proceed. A thorough physical examination should be made in every case and a detailed history should include all factors of heredity, environment and symptomatology that apply particularly to the allergic patient.

Oklahoma State Medical Assn. Journal, Muskogee

25: 137-182 (April) 1932

Pneumococcic Meningitis: Case Reports with One Recovery. E. H. Shuller, McAlester.—p. 137.
Diagnosis and Medical Treatment of Peptic Ulcer. J. H. Veazey, Madill.—p. 141.
Conization of Cervix with Electric Scalpel. J. E. Wallace, Tulsa.—p. 143.
Pellagra, with Especial Emphasis on Mental Reaction and Treatment. J. J. Gable and J. L. Day, Norman.—p. 149.
Pathologic Uterine Fundus Bleeding in Early and Late Child-Bearing Periods. W. Long, Oklahoma City.—p. 153.
Cervicitis. K. J. Wilson, Oklahoma City.—p. 157.
Present Day Indications for Cesarean Section. J. H. Robinson, Oklahoma City.—p. 160.
Practice What You Preach. C. Puckett, Oklahoma City.—p. 163.

Pennsylvania Medical Journal, Harrisburg

35: 533-604 (May) 1932

Symposium on Mental Hygiene in Childhood: Pediatrist's Relation to the Problem Child. R. H. Israel, Warren.—p. 533.
Id.: Relation of Organic Disorders to Mental Deficiency. E. A. Whitney, Elwyn.—p. 535.
Id.: Relation of Endocrines to Juvenile Psychoses. E. B. McCready, Pittsburgh.—p. 538.
Symposium on Diseases of Bladder: Some of Complications of Prostatism and Prostatectomy. N. P. Rathbun, Brooklyn.—p. 541.
Id.: Surgical Treatment of Median Bar. J. C. Burt and C. M. Lane, Pittsburgh.—p. 547.
Id.: Treatment of Bladder Tumors. W. H. Haines, Philadelphia.—p. 549.
*Significance of Sugar in Urine. H. T. Kelly, Philadelphia.—p. 553.
Repair Surgery of Eye and Its Appendages. L. C. Peter, Philadelphia.—p. 556.
Pedicled Flap in Ophthalmic Plastic Surgery. E. B. Spaeth, Philadelphia.—p. 560.

Significance of Sugar in Urine.—According to Kelly, sugar in the urine, per se, is not sufficient evidence to warrant a diagnosis of diabetes, as many individuals with sugar in the urine have been observed over many years and are not diabetic. Sugar in the urine accompanied by a hyperglycemia after fasting from ten to twelve hours is indicative of diabetes. The dextrose tolerance test to date is the most reliable readily available method for distinguishing diabetes and renal glycosuria. In untreated cases following the ingestion of 100 Gm. of dextrose, the blood sugar returning to normal within two hours is adequate evidence that the patient is not diabetic. The dextrose tolerance test is dangerous when administered to a patient with an existing hyperglycemia and may convert a mild diabetes into a moderately severe one.

Physical Therapeutics, Elmira, N. Y.

50: 121-160 (April) 1932

Oscillatory Desiccation in Treatment of Accessible Malignant Growths and Minor Surgical Conditions: New Electrical Effect. W. L. Clark, Philadelphia.—p. 121.
Electrosurgery, Past, Present and Future. W. L. Clark, Philadelphia.—p. 139.

Public Health Reports, Washington, D. C.

47: 1043-1093 (May 6) 1932

Standardization of Scarlet Fever Streptococcus Antitoxin. M. V. Veldee.—p. 1043.

Southern Medical Journal, Birmingham, Ala.

25: 441-558 (May) 1932

Cancer of Rectum: Study of One Hundred Case Records. G. V. Brindley Temple, Texas.—p. 441.
*Thrombopenic Granulocytopenia (Agranulocytosis with Hemorrhages). R. R. Kracke, Emory University, Ga.—p. 448.
*Postoperative Care of Foreign Body in Lung in Infants and Young Children. M. F. Arbuckle, St. Louis.—p. 456.
Method of Increasing Specific Resistance of Syphilitic Individual to His Disease. C. C. Dennie, Kansas City, Mo.—p. 462.
Rupture of Kidney. E. Floyd and J. L. Pittman, Atlanta, Ga.—p. 467.
Treatment of Compression Fractures of Vertebrae by Rogers' Frame. J. I. Mitchell, Memphis, Tenn.—p. 473.
Hereditary Ectodermal Dysplasia of Anhidrotic Type. R. Bowen, Memphis, Tenn.—p. 481.
*Value of Schilling Differential Blood Count in Pediatrics. W. A. McGee, Richmond, Va.—p. 484.
Diet and Diabetes. V. E. Simpson, Louisville, Ky.—p. 489.
Emotional Instability as Frequent Cause of Digestive Disorders. J. S. McLester, Birmingham, Ala.—p. 500.
Use of Modified Aschheim-Zondek Test for Pregnancy. H. L. Kincaid and H. J. Rafn, Houston, Texas.—p. 503.
Use of Rabbit in Aschheim-Zondek Test for Pregnancy. Martha A. Wood, Houston, Texas.—p. 508.
Treatment of Carcinoma of Cervix. R. H. Lafferty and C. C. Phillips, Charlotte, N. C.—p. 510.
Cancer of Esophagus. P. Stiles, Birmingham, Ala.—p. 512.
Treatment of Potentially Infected Abdominal Wound, and Its Relationship to Mortality of Acute Infections of Abdomen. H. A. Gamble, Greenville, Miss.—p. 515.
Management of the Asthmatic: Some Points of General Information. B. G. Efron, New Orleans.—p. 519.

Thrombopenic Granulocytopenia.—Kracke presents a brief summary of the important features of granulocytopenia. The syndrome of thrombopenic granulocytopenia, consisting of marked neutropenia, marked thrombocytopenia, slight anemia, normal coagulation and prolonged bleeding time, delayed clot retractility, petechiae, hemorrhages, terminal infection, and death, is described, with case reports. The importance is emphasized of careful differentiation of thrombopenic granulocytopenia, a disease of the bone marrow, and idiopathic thrombocytopenia, a disease presumably of the spleen.

Foreign Body in Lung in Infants and Young Children.—Arbuckle states that the application of suction through the tracheotomy tube is a most satisfactory method of supplying lung drainage and of freeing the airway of obstruction. If one is unsuccessful by this method, the bronchoscope should be employed, even though it is necessary to do this repeatedly. The secretion of mucus should be encouraged rather than discouraged. This will be aided by the free administration of fluids either by mouth or by parenteral methods. No sedatives should be given. Expectorants are indicated. No drugs should be given that dry up the secretion. The oxygen tent is a most important adjunct, by the use of which many lives will be saved.

Value of Schilling Differential Blood Count in Pediatrics.—McGee calls attention to the fact that the use of the Schilling differential blood count reveals much information relative to diagnosis, prognosis and treatment. It serves as a simple yet accurate index of changes taking place in the body in infections. Repeated hemograms are of more value than single determinations, and they reduce the need of total leukocyte counts. Changes in granulocytes often reveal progress or relapse ahead of physical changes, symptoms, fever and total white cell counts. Information obtained from the Schilling counts should be used in collaboration with other clinical signs and symptoms, but a suggestive blood picture should not be ignored even in the absence of clinical symptoms. The present Ehrlich differential count is much less informative and should be replaced by the Schilling classification of leukocytes. The Giemsa or the modified Giemsa stain should gradually replace Wright's stain. The Schilling count is of more relative value than the filament-nonfilament count. It is of particular value among children, as it deals mainly with neutrophilic leukocytes rather than lymphocytes, which predominate in the blood picture during childhood.

Southwestern Medicine, Phoenix, Ariz.

14: 149-192 (April) 1932

Chronic Arthritis: Clinical Grouping. W. P. Holbrook, Tucson, Ariz.—p. 149.
Use of Kirschner Wire in Treatment of Fractures. W. L. Rogers, San Francisco.—p. 153.
Balantidic Dysentery. R. W. Mendelson, Albuquerque, New Mexico.—p. 156.
Altitude Changes in Artificial Pneumothorax Patients. E. A. Gatterdam, Phoenix, Ariz.—p. 158.
Implantation of Biliary Fistula Into Gastro-Intestinal Tract: Case Report and Two Year Follow-Up. W. R. Lovelace, Albuquerque, New Mexico.—p. 159.

West Virginia Medical Journal, Charleston

28: 193-240 (May) 1932

Observations on Treatment of Meningitis. G. M. Lyon, Huntington.—p. 193.
*Clinical Study of Powdered Whole Milk in Infant Feeding. A. E. Amick, Charleston.—p. 196.
Diarrheas of Children. G. Daniel, Beards Fork.—p. 199.
Modern Diuretics. R. M. Wylie, Huntington.—p. 204.
Plea for Incurables, for Alleviation of Their Suffering. A. P. Butt, Elkins.—p. 207.
Surgical Treatment of Peptic Ulcer. I. Abell, Louisville, Ky.—p. 209.
Vitamins. D. A. Watkins, Monongah.—p. 214.

Powdered Whole Milk in Infant Feeding.—On the basis of a clinical experience with 100 infants given powdered whole milk during a two-year period, Amick concludes that when an infant is deprived of breast milk and has demonstrated an inability to tolerate cow's milk, or when fresh cow's milk of unquestionable purity is not available, the powdered whole milk as produced by a spray process meets a greatly needed demand. Fruit juices and cod liver oil should be added as a routine, as with fluid milk. When properly modified and supplemented, all the nutritive requirements are satisfied. As a complementary food it was wholly satisfactory. When given in concentrated solution, thus increasing the caloric intake without necessitating the ingestion of large amounts of fluid, it serves a good purpose. When one desires to give a high proportion of protein and salts, it can be given to advantage in the concentrated form. The purity and keeping qualities of this powdered milk are a blessing in the hands of those without modern refrigerating facilities. It is not any more expensive than other types of milk.

Wisconsin Medical Journal, Madison

31: 290-363 (May) 1932

*What Every Doctor Should Know About Pathology. J. C. Bloodgood, Baltimore.—p. 297.
Encouragements in Surgical Treatment of Carcinoma of Colon and Rectum. F. W. Rankin, Rochester, Minn.—p. 302.
Differential Diagnosis of Ulcerative Lesions of Large Intestine and Rectum, with Especial Reference to Proctoscopic Examination. A. C. Gorder, Milwaukee.—p. 308.
Acute Appendicitis. J. Dean, Madison.—p. 313.
Intravenous Cholecystography: Technic and Analysis of Eight Hundred Cases. L. V. Littig and J. N. Sisk, Madison.—p. 316.
External Cephalic Version. J. B. Vedder, Marshfield.—p. 319.

Pathology.—Bloodgood considers that the most important thing every physician should know about pathology is that cancer is rapidly becoming a microscopic disease; that all patients whose local lesion has not assumed the definite clinical picture of cancer have a better chance of a cure without mutilation if the diagnosis is made at the operation from frozen sections examined by a competent pathologist. If every member of the medical profession could be convinced of this, the introduction of microscopic pathology into the operating room as an integral part of the operating room technic would be accomplished more quickly and the entire medical profession would be in a better position to meet the new demands of an enlightened public who come under their observation either for a diagnostic survey when apparently well or after the first warning from their local trouble. Many diagnostic tests can be made by technicians, such as the basal metabolism test, blood counts, chemical examination of the blood, urinalysis, blood pressure, and kidney function. Other tests can be made only by the specialist; for example, examination with the ophthalmoscope and the laryngoscope; interpretation of roentgenograms, which can be taken by the technician; interpretation of the microscopic section, and interpretation of the electrocardiogram. Not every physician is expected to make or even interpret these laboratory tests, but he should know when these must be made, because, unless they are made in time, their diagnostic value becomes of less and less value to the patient. In spite of the great importance of the routine clinical history and careful physical examination, the importance of these laboratory tests and special examinations increases as patients seek advice the moment they are warned, or report annually or semiannually for a diagnostic survey. Today, more than ever before, the expertness of the surgeon, the completeness of the preoperative preparation, and the reduction of the dangers of anesthesia and shock may be effaced because of an incorrect preoperative or operative diagnosis, owing to the fact that frozen sections were not made to direct the character and extent of the operative procedure.

Yale Journal of Biology and Medicine, New Haven

4: 649-748 (May) 1932

Eli Ives: Practitioner, Teacher and Botanist. G. Blumer, New Haven, Conn.—p. 649.
The Beginnings of Obstetrics in America. H. Thoms, New Haven, Conn.—p. 665.
*Effect of Diet and Pituitary Growth-Hormone on Hypophysectomized Rats. K. W. Thompson and D. W. Gaiser, Boston.—p. 677.
Sterility Study: Essentials of Diagnostic Survey. W. H. Cary, New York.—p. 691.
End-Results in Treatment of Carcinoma of Stomach. A. W. Oughterson, New Haven, Conn.—p. 711.

Growth of Hypophysectomized Rats.—Thompson and Gaiser describe experiments in which they noted that totally hypophysectomized rats failed to gain weight when given a growth-promoting diet. When given injections of pituitary growth hormone, three groups of hypophysectomized rats gained weight in proportion to the excellence of their diet, and their gain was comparable to the gain of normal animals on the same diets receiving the same injections. Hypophysectomized rats receiving injections of growth hormone did not show a greater uniformity of growth rate than did normal animals under the same treatment. The authors feel that infections played an important part in the lack of uniformity. Withdrawal of the growth extract resulted in a loss of weight of hypophysectomized animals fed growth-promoting diets. A short method for the assay of potency of growth hormone is suggested. The mortality of hypophysectomized rats on the best diet was about half the mortality of those on the poorer diet. Growth hormone failed to cause regeneration of the sexual apparatus, but it caused infantile hair to be replaced by normal hair.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

16: 257-320 (May) 1932

Vestibulo-Ocular Reflex Paths. L. Paton.—p. 257.
Morphologic Study of Lateral Geniculate Body. W. E. L. G. Clark.—p. 264.
Tuberculin in Ophthalmology. F. A. Williamson-Noble.—p. 285.
Hardness of Eye: Historical Note. A. Sorsby.—p. 292.
Family of Groenouw's Dystrophy. E. V. Srinivasan.—p. 296.

British Medical Journal, London

1: 785-806 (April 30) 1932

*Origin of Tumors. J. P. Lockhart-Mummery.—p. 785.
Note on Operative Treatment of Facial Palsy, with Account of Some Animal Experiments. C. Ballance.—p. 787.
*Osteartheritis. M. B. Ray.—p. 789.
Case Illustrating Failure of Intravenous Liver Therapy in Pernicious Anemia. J. G. McCrie.—p. 792.
Nomenclature of Eclampsia. B. Solomons and F. Bourke.—p. 794.
Tooth Extraction and Chronic Infective Endocarditis. H. H. Brown.—p. 796.

Origin of Tumors.—According to Lockhart-Mummery, the essential difference between a normal cell and a tumor cell is one of behavior, not of apparent structure. The tumor cell grows faster than the normal cell. There are two kinds of reproduction—that which produces a new individual, and that which results in the replacements of injured or worn out cells in the tissues. All cells, both germ cells and somatic cells, breed true to their parent cells, and this breeding is controlled by the genes in their nuclei. Changes or mutations of the genes in the nuclei may occur, and, when they do, the daughter cells will always breed true to the mutation. Tumors are the result of a mutation of the genes controlling division of somatic cells.

Osteartheritis.—Ray states that although in many respects osteartheritis may be looked on as a local rather than a general disease, the fact remains that its manifestations are associated with degenerative conditions. Treatment must therefore be directed toward sparing the patient any unnecessary metabolic burdens. A good working rule to effect this is to estimate the calorific value of the ordinary diet the patient is in the habit of taking, and to reduce it by one third. This is especially applicable in the case of well nourished plethoric individuals, which so many of the subjects are. There is usually an increased blood pressure, and the blood uric acid is apt to be high. For this reason the diet should follow closely the lines adopted for gouty patients. Besides avoiding foods rich in purines, the patient should be ensured an adequate supply of vitamins. This is of prime importance, because osteartheritis is undoubtedly associated with the absorption of toxins from a sluggishly acting intestine. Good results frequently follow measures directed toward changing the character of the intestinal flora, such as by the use of Bulgarian soured milk. In addition to these general measures, there are certain physical methods of treatment which are of the greatest value in restoring movement to stiffened joints and muscles and in the relief of pain. For the first of these the deep pool bath is extensively used. It is of a sufficient depth to allow a patient to stand upright and to walk a step or two, and wide enough to permit exercises. Its temperature is kept at about 100 F (38 C.). Combined with the pool is an underwater douche at a temperature of about 10 degrees above that of the bath. This has a powerful effect on the skin circulation and in itself constitutes an efficient form of massage, as well as relieving pain. As all objects weigh less in water than in air, a limb immersed in water can be moved with much less fatigue than in ordinary circumstances. The water supports the limbs, and movements are permitted that would be otherwise impossible. In addition to the actual mobilization of a stiffened joint, the fact that movement is possible at all has an excellent mental effect on the patient, and he is thereby encouraged to persevere in his efforts. For the relief of pain, heat in some form or another is a sovereign remedy. To be effectual it should be intensive, or as hot as can be borne. It may be applied in various ways—the hot immersion bath with an underwater douche 10 degrees higher than the bath, radiant heat, or the

high-frequency current (diathermy). In deep-seated parts, such as the hip, diathermy is the method of choice. For local applications to more accessible parts the hot pack of peat, mud or paraffin wax is of value. As, owing to the immobilization of the affected joint, the muscles which control it are apt to waste, underwater massage and manipulation—given by either the Aix or the Vichy system—will restore their tone and at the same time remove effusions that are liable to form as a result of the sluggishness of the blood and lymph circulation.

Journal of Physiology, London

74: 343-498 (April) 1932

*Control of Circulation Through Liver. W. Bauer, H. H. Dale, L. T. Poulsson and D. W. Richards.—p. 343.
*Influence of Work on Calorigenic Action of Thyroxine. W. M. Boothby, O. B. Buckley and C. M. Wilhelmj.—p. 376.
Some Fetal Blood Pressure Reactions. G. A. Clark.—p. 391.
Effect of Thyroid Feeding on Oxygen Consumption of Heart and Other Tissues. W. Dock and J. K. Lewis.—p. 401.
Regional Variations in Sensitivity to Flicker. R. S. Creed and T. C. Ruch.—p. 407.
Lapicque's Canonical Strength Duration Curve. W. A. H. Rushton. —p. 424.
Effect of Length on Resting Metabolism of Muscle. T. P. Feng.—p. 441.
Thermo-Elastic Properties of Muscle. T. P. Feng.—p. 455.
Changes in Carbon Dioxide Pressure and Hydrogen Ion Concentration of Arterial Blood of Man Which Are Associated with Hyperpnea Due to Carbon Dioxide. C. G. Douglas and R. E. Havard.—p. 471.
*Effects of Intestinal Rhythm on General Blood Pressure. J. Barcroft, Y. Nisimaru and F. R. Steggerda.—p. 490.

Control of Circulation Through Liver.—Bauer and his associates describe a scheme for complete perfusion of the liver, with records of arterial and portal inflows, hepatic outflow and liver volume. In addition to vasomotor controls of the inflow, the outflow from the dog's liver is controlled by a sluice mechanism, closed by histamine and opened by epinephrine or by sympathetic nerve impulses. This sluice mechanism is located near the caval orifices of the main hepatic veins. Both epinephrine and histamine appear to produce a relatively weak constriction of deeper veins.

Calorigenic Action of Thyroxine.—Boothby and his associates studied the effect of eleven intravenous injections of 10 Gm. of thyroxine on the metabolism of a dog over a period of nine months, divided into three periods. In the first and third periods of 111 and 64 days, the dog did no work. In the second period of 115 days, it was exercised on a treadmill. Throughout the experiment the dog was on a constant weighed diet, containing 2.93 Gm. of nitrogen and 480 calories each day. Average nitrogen equilibrium was maintained in all three periods. The urine nitrogen averaged 2.65 Gm., that in the feces and hair shed 0.24 Gm.; in all, 2.89 Gm. daily. Immediately after the injection of thyroxine there was a temporary negative nitrogen balance, followed by a compensatory positive balance after which equilibrium was restored. During the first period the respiratory quotient for all days except the first four after each injection averaged 0.82, for the second period 0.81, and for the third period 0.83. The dog lost weight in the second period. As it was in nitrogen equilibrium, this loss must have been due to loss of fat, and the heat value of fat corresponding to the loss in weight was calculated to be equivalent to the energy of the work. It was also calculated that the combustion of this amount of fat would lower the respiratory quotient from 0.82 to 0.81, as in fact found. During the first four days after injection of thyroxine the respiratory quotient was reduced to 0.77, 0.75 and 0.76 in the three periods, respectively. This decrease was greater than could be accounted for by the amount of fat needed to meet the increased energy requirements. The nitrogen excretion was increased immediately after injection of thyroxine, mainly owing to increased excretion of urea, and to a slight extent of creatine. The amounts of the other nitrogenous products did not vary significantly. Compensatory nitrogen retention followed for a few days, owing to decreased excretion of urea. Following exercise the decay curve of thyroxine decreased less rapidly than in the preliminary control period, and this effect continued throughout the final control period. The total calorigenic action of 10 mg. of thyroxine averaged 220 calories in the first period, 449 calories in the second period with exercise, and 487 calories in the third period. Exercise, therefore, instead of decreasing, increased the calorigenic action of thyroxine, and this increase persisted for many days after the exercise was stopped.

Intestinal Rhythm and Blood Pressure.—According to Barcroft and his associates, the intestine possesses the same kind of rhythm as the spleen, the duration of the wave being about twenty to fifty seconds, as recorded by plethysmographic methods. These rhythmic contractions and relaxations of the intestine have a simultaneous effect on general blood pressure. This is less marked than in the case of the splenic rhythm. These rhythmic contractions of the cat's intestine can still be recorded after removal of the spleen and suprarenals, also after denervation of the intestine.

Lancet, London

1: 919-970 (April 30) 1932

*Acute Mastoid Disease. S. Hastings.—p. 919.
*Heroin Addiction in Egypt and Its Treatment During Withdrawal Period. A. G. Biggam, M. A. Arafa and A. F. Ragab.—p. 922.
*Spontaneous Lactation Associated with Enlargement of Pituitary: Report of Two Cases. D. Krestin.—p. 928.
Speech and Intelligence. A. G. Morison.—p. 931.

Acute Mastoid Disease.—According to Hastings, it is important to remember that for practical purposes all acute and chronic infections of the mastoid bone follow disease of the middle ear. It is possible that some cases of tuberculous mastoid may arise without previous otitis, and cases of typhoid and syphilitic disease of the mastoid are also occasionally seen. A severe injury may start mastoid trouble. As a general rule, however, one may say that mastoid disease is preceded by infection of the middle ear, though this may clear up completely before the mastoid infection gives evidence of its presence. The author first of all recalls a few points in the anatomy of this region. Infection of the middle ear always takes place by way of the eustachian tube, so that as long as this tube is patent, whatever one may do to the mastoid or middle ear, reinfection can always take place. The mastoid antrum and cells may be regarded as diverticula from the middle ear, and whenever an acute infection of this cavity occurs there is pathologic evidence that the mucous lining of the mastoid antrum and cells is also more or less involved. As a rule the mastoid cells get larger the farther one passes from the antrum, the largest cell being usually in the mastoid process at its tip. In very acute cases the mastoid infection may be so severe as to cause acute osteomyelitis of the mastoid bone. As a general rule, however, mastoid symptoms calling for surgical treatment develop only when pus is retained under tension, and for this to happen there must be obstruction at one of three points; namely, the eustachian tube, the aditus, or the communication between the mastoid antrum and one or more of the cells. When the eustachian tube is the seat of the obstruction, the mastoid symptoms will be relieved by a free incision in the membrana tympani. When the obstruction is in the aditus and is not relieved spontaneously, nothing short of opening the mastoid antrum will effect a cure. Cases in which the obstruction is situated between the mastoid antrum and the cells usually come on relatively late, and all trouble in the middle ear and antrum may have cleared up meanwhile.

Addiction to Diacetylmorphine.—Biggam and his associates treated a series of 102 addicts on a special substitution scheme, diacetylmorphine being stopped at once and sedative drugs given to alleviate the withdrawal symptoms. Under this line of treatment the patient can be kept comfortable and almost free from symptoms during the breaking off period. The sleeplessness which is usually such a marked and distressing feature of the period following withdrawal can be completely relieved in 80 per cent of the cases, from six to eight hours' sleep being obtained each night even during the first four days. Not infrequently patients who were reported as not sleeping satisfactorily during the night were found sound asleep when they were visited during the day time. The 20 per cent reported as not obtaining good sleep usually slept for from two to four hours during the first three or four days after stopping the drug. The gastro-intestinal symptoms were never troublesome on this substitution treatment and were present in only about half the cases, and then only to a slight degree. Sneezing, yawning and lacrimation were slight and caused little or no inconvenience. Under this scheme of treatment the sedative drugs morphine, phenobarbital, intramuscular magnesium sulphate, and paraldehyde are gradually reduced,

and the patient finishes all drug treatment by the end of the seventh day. Occasionally, however, when a patient showed any marked discomfort during any stage of the withdrawal period, it was arranged that he should have his previous day's treatment repeated instead of going on with the next day's reduction, but this change was seldom found to be necessary. This method of substitution treatment the authors consider most satisfactory, especially when the confidence of the addict can be obtained, and it seldom fails to make his withdrawal period comfortable. It entails frequent treatment and many intramuscular or hypodermic injections, but this all tends to have a beneficial mental effect on this type of individual and is consequently more advantageous than otherwise.

Spontaneous Lactation and Enlarged Pituitary.—Krestin reports two cases of spontaneous lactation associated with enlargement of the pituitary. He calls attention to the fact that there appears to be an established relationship between the anterior lobe of the pituitary and mammary activity, at least under experimental conditions. Whether the power to stimulate lactation is inseparably vested with the growth hormone, or whether a separate "mammary" hormone will eventually be isolated, is a matter that must await further experimental work. So far, mammary activity has not been induced by the use of the aqueous acid maturity-stimulating hormone isolated by Evans and Simpson.

Quart. Bull., Health Org., League of Nations, Geneva

1: 1-157 (March) 1932

Immunization Against Diphtheria: Resolutions of the Conference Held in London in June, 1931.—p. 1.
Medical Education in England. G. Newman.—p. 7.
The Milk Supply of North American Cities. R. Burri.—p. 46.
Tropical Pneumonia. R. Gautier.—p. 64.
*Second Analytic Review of Reports from Pasteur Institutes on Results of Antirabies Treatment. A. G. McKendrick.—p. 110.
Floods in China: Report of Medical Director of Health Organization on the Work Undertaken to Coordinate the Campaign Against Epidemics.—p. 142.

Statistics on Rabies.—In an analytic review of reports from Pasteur institutes on the results of antirabies treatment, McKendrick did not find decisive evidence, apart from liability to postvaccinal paralyses, of the superiority of any one of the various methods of treatment that have been employed. Within the European group, the differences between the death rates of the various institutes are not greater than would be expected as the result of chance variations. A similar statement is also true with regard to the non-European group, but it is not true with regard to the whole statistics embracing the two groups. It is, however, to be noted that the statistics as submitted indicate a probable advantage in favor of modified dilution methods of treatment as compared with the others. Further analysis demonstrates the presence of factors which partly account for the figures, apart from intrinsic superiority of the method; but, when all allowance is made for these factors, there appears to remain a certain amount of evidence in favor of this method as compared with the others. It should be emphasized, however, that the validity of such a conclusion depends entirely on the assumption that no unknown circumstances of importance are operating which might influence the figures decisively in favor of the method. The figures relating to the occurrence of postvaccinal paralyses after treatment by the different methods are given in detail. The proportion of accidents after treatment by dried or glycerinated cords is much lower than was found in a previous review but is still much greater than after treatment by killed vaccines.

Japanese Journal of Obstetrics and Gynecology, Kyoto

15: 1-72 (Feb.) 1932

Supravaginal Amputation of Pregnant Uterus by Vaginal Route. H. Okabayashi.—p. 2.
Experimental Study of Krönig's Operation: Part I. Histologic Investigation. T. Kumamoto.—p. 6.
Id.: Part III. Effects of Krönig's Operation and Roentgen-Ray Irradiation on Transplanted Sarcoma of Uterus in Rabbit. T. Kumamoto.—p. 30.
Id.: Part IV. Pharmacologic Sensibility of Uterus Extirpated After Ligation of Afferent Blood Vessels. T. Kumamoto.—p. 35.
Investigation of Placental Ferments in Various Stages of Pregnancy. M. Abe.—p. 44.
Biologic Investigation of Iron Metabolism. S. Inoue.—p. 53.
Treatment of Leukorrhea by "Spuman." H. Matsuoka and H. Kawakami.—p. 70.

Paris Médical

1: 409-424 (May 14) 1932

Intersexual States. P. Sainton.—p. 409.
*Perinephric Phlegmon Due to Bacillus Enteritidis. G. Andrieu, Idrac, and Maroger.—p. 418.

Perinephric Phlegmon Due to Bacillus Enteritidis.—Andrieu and his associates report a case of perinephric phlegmon due to Bacillus enteritidis. They are of the opinion that, while gastro-enteric infections produced by B. enteritidis are usually recognized, the infections of typhoid nature which are produced by this bacillus, with or without localization in an organ, are often not recognized and consequently the organism may be much more of a factor in human pathology than is generally believed. In the case reported, two types of organisms, identified as B. enteritidis and enterococci, were isolated from the abscess. In direct smears the gram-negative bacillus predominated in the proportion of 50 to 1. The bacillus isolated from the patient was agglutinated by the patient's serum in 1:500 dilution, stock cultures of B. enteritidis were agglutinated in 1:400 dilution and typhoid-paratyphoid strains were not agglutinated. Fecal examinations were negative for typhoid-paratyphoid bacilli and B. enteritidis. A few months before the phlegmon was drained, the patient had recovered from a typhoid infection, the origin of which was not determined because serum reactions were performed only with typhoid-paratyphoid cultures. During this infection, abdominal pains had developed, which gradually localized in the left lumbar region and, finally becoming acute, led to hospitalization and discovery of a perinephric phlegmon. The authors think that the typhoid infection was probably due to B. enteritidis and that renal localization of the bacillus during the infection was followed by invasion of the perirenal adipose tissue. The virulence of the organism was apparently increased by the bacteriologic trauma produced by the enterococcus, undoubtedly of intestinal origin. The authors think this case corroborates the opinion that infections of typhoid nature due to B. enteritidis are not as rare as supposed. While the enteritic or choleriform type of infection is usually recognized through its epidemic nature and etiology (contaminated meats), the typhoid form is often mistakenly diagnosed, especially when the cases are few or isolated and the etiology cannot be traced. Bacteriologic examination is the only certain diagnostic measure. The importance of perfect technic is stressed. If only serologic tests are made, a negative result with typhoid-paratyphoid bacilli should be followed by serum agglutination tests with B. enteritidis. If an organism with the cultural characteristics of the paratyphoid B bacillus is isolated from the blood, urine, feces or pus, agglutination tests should be performed, and if it is not agglutinated by the corresponding antiserum, the reaction with enteritidis antiserum should be tested.

Presse Médicale, Paris

40: 773-788 (May 14) 1932

Comparison of Results of Interferometry and Basal Metabolism in Hyperthyroid Conditions. M. Laignel-Lavastine and Y. Boquien.—p. 773.
Anatomy and Etiology of Obstetric Intracranial Hemorrhages in the New-Born. J. Voron and H. Pigeaud.—p. 774.
*Insidious Lymphosplenic Syndrome with Hyperleukocytosis and Lymphocytosis Spontaneously Curable. F. Codvelle and R. Sohier.—p. 776.

Insidious Lymphosplenic Syndrome Spontaneously Curable.—Codvelle and Sohier report the case of a man, aged 25, who at hospitalization presented the syndrome of asthenia, enlarged axillary lymph nodes without periadenitis, hypertrophy of the spleen, and leukocytosis with marked lymphocytosis. The general condition of the patient, a vigorous athletic type, was good and his only complaint was of great fatigue at the slightest effort. There was no incident or febrile episode to mark the beginning of the disease, and nothing in the anamnesis to throw light on the case. Therapy was abstained from while permission was being awaited for a biopsy, which was not received. In a few weeks the total leukocyte count dropped from about 22,000 to 14,000, with a reduction of lymphocytes from 76 per cent to 60 per cent. The hypertrophy of the spleen regressed, while that of the lymph nodes persisted for a time. The patient regained his strength. In a few months the leukocytic equilibrium returned, with 34 per cent lymphocytes in a total leukocyte count of 9,000, and 62 per cent poly-

morphonuclear neutrophils as opposed to 17 per cent at the first examination. In discussing the problem of classifying this case, the authors compare the syndrome described with that of malignant lymphogranulomatosis, lymphatic subleukemia, a lymphocytic increase in the course of aleukemic lymphomatosis, pseudoleukemia and acute benign lymphadenosis. They find that the case reported does not correspond perfectly to any of these classifications either because of hematologic or clinical differences, or both.

Revue de Chirurgie, Paris

51: 229-318 (April) 1932

*Biliary Lithiasis: Personal Statistics of One Hundred and Forty-Five Cases. M. G. Bachy.—p. 229.
Vertebral Angioma. Clavelin and Gauthier.—p. 308.

Biliary Lithiasis.—Bachy presents a comprehensive study of 145 cases of biliary lithiasis in which he performed surgical intervention and compares the conclusions drawn from it with those of his thesis of 1913 on cholecystectomy in biliary lithiasis, which was based on eighty observations obtained from others. The case reports are grouped according to the type of biliary lithiasis which they represent. Each type is briefly discussed as to pathogenesis, symptomatology and prognosis, and the forms of intervention practiced in the cases belonging to that type are reported. The cases comprise the following types of biliary lithiasis: intestinal occlusion by biliary ileus, acute peritonitis with closed and with perforated biliary bladder, neoplasm secondary to lithiasis, acute cholecystitis, chronic cholecystitis, cholecystoceles, cholecystitis with pancreatitis, calculous cholecystitis complicated by inclusion of calculi in the common bile duct, and cholecystitis with predominating digestive symptoms. The author discusses the general indications for operation and the preoperative and postoperative care as well as the choice of an anesthetic. He lists the various types of incisions employed in his interventions; Sprengel's transverse incision was practiced in the majority of cases. The main steps of the operative technic and the precautions to be observed in the course of the operation are reviewed. The author draws several major conclusions from his study. He considers medical treatment of biliary lithiasis insufficient for the cure of calculous cholecystitis, but it should always be associated with the surgical treatment. Cholecystectomy is given first place in the therapy of calculous cholecystitis. The necessity of draining the common bile duct, especially when there is a concomitant pancreatitis, is insisted on and the danger of pancreatitis is stressed. The drainage of the principal biliary ducts, when there is lithiasis or infection, is necessary and gives excellent results. Cholecystectomy should be performed from the neck toward the bottom, but one should not remove the cystic duct if one wishes to avoid postoperative annoyances. It is necessary to leave one cigaret drain in contact with the stump of the cystic duct. The author considers cholecystostomy an easy and safe operation and ranks it second among therapeutic measures in biliary lithiasis. Treatment of patients operated on for biliary lithiasis must be continued for a long period. The digestive disturbances and pains sometimes observed usually recede readily with appropriate treatment.

Schweizerische medizinische Wochenschrift, Basel

62: 465-488 (May 14) 1932

Studies on High and Highest Atmosphere. F. W. P. Götz.—p. 465.
Significance of Activity of Swiss Institute for Investigations on High Altitude Climate and Tuberculosis in Davos. R. Wolfer.—p. 468.
Confusion in Investigations on Physiologic Significance of High Altitudes Due to False Meteorological Conceptions. R. Wolfer.—p. 470.
Treatment of Habitual Constipation. E. Renold.—p. 471.
*Sojourn in Lowlands for Tuberculous Patients from High Mountains. R. Campbell.—p. 472.
Limits and Necessity of Cooperation Between Physiologic Climatology and Climatophysiology. C. Dorno.—p. 474.

Sojourn in Lowlands for Tuberculous Patients from High Mountains.—Campbell calls attention to the fact that tuberculosis in persons who live on high mountains is often not favorably influenced by the high altitude climate. He observed that for such patients a sojourn in the lowlands is often much more beneficial. After a stay of several months in the lower altitudes, a return to the high mountains is again a new stimulation and may have a curative influence. The author also thinks that tuberculous patients who have stayed in the high mountains for a prolonged period and who no longer show favorable effects from the high altitude climate would perhaps profit by a repeated change between higher and lower altitudes. He is convinced that the changes in altitude, not the altitude itself, is the most curative factor. However, the author does not wish to discredit the therapeutic value of the high mountain climate; on the contrary, he is convinced that for the majority of patients with tuberculosis it is highly effective.

Policlinico, Rome

39: 141-212 (March 15) 1932. Surgical Section

Forms of Peritoneal Endothelioma of Uncertain Origin in Gynecology. L. Firrao.—p. 141.
*Bilateral Carcinoma of Breasts Associated with Unilateral Tuberculosis. C. Panà.—p. 155.
Bacteriologic and Anatomic Study of Appendicitis. N. Sette and I. Barcaroli.—p. 167.
Experimental Hydronephrosis. L. Sussi.—p. 201.

Bilateral Carcinoma of Breasts Associated with Unilateral Tuberculosis.—Panà reviews the literature of breast cancer associated with tuberculosis, stating that: 1. A neoplastic proliferation may appear in a breast which has been tuberculous for a long time. 2. The tuberculous lesion may occur in an early developed tumor. 3. The two diseases can occur simultaneously with or without the development of one stimulating that of the other. In the opinion of the author, bilateral tumors are caused by malformation of embryonic segments, lesions of the spinal medulla of a metameric type, as well as generalized neoplastic diathesis. In the author's case a form of tuberculosis associated with carcinoma was found only in the left breast. In the same breast the notable quantity of tuberculous nodules, the great extension of the process, and the marked existing sclerosis induced the belief that the tuberculous process dated far back and preceded the appearance of the neoplasm. The lack of cutaneous and perivascular tuberculous lesions indicates that the tubercle bacilli did not enter the breast by the lymphatic route or by the blood stream. Although the author has no evidence of it, penetration undoubtedly occurred through the milk ducts.

Tumori, Milan

6: 101-200 (March-April) 1932

Experimental Malpighian Metaplasia of Gastric Mucosa of Dog from Applications of Nicotine and Tobacco Smoke. A. Moratti.—p. 101.
*Topical Action of Insulin on Cancers of Skin. S. F. Gomes da Costa.—p. 140.
Anatomoclinical Study of So-Called Metatypical Form of Cancer of Skin. G. Sciacchitano.—p. 157.
*Bilateral Lymphoblastoma of Breast. G. Pasqualino.—p. 172.

Topical Action of Insulin on Skin Cancers.—Gomes da Costa states that daily applications of insulin to ulcerated cancers of the skin cause cicatrization and at least partial regression of the neoplastic tissue. The healing process begins at the edges of the ulcer and progresses rapidly. The newly formed epithelium covering the cancerous tissue is a pavement epithelium which is continuous with the healthy skin. This epithelium covers the neoplastic tissue without being involved by the cancerous process. The neoplastic tissue in the depth of the lesion often disappears. The author believes that the skin cancers that are most sensitive to the topical action of insulin are planocellular. The various solutions of insulin with different p_H have identical action on the healing and regression of neoplastic tissue. If they are boiled from two to three hours they lose their hypoglycemic action as well as their healing action on ulcerated skin cancers.

Bilateral Lymphoblastoma of the Breast.—Pasqualino describes the symptomatology of a patient with bilateral lymphoblastoma of the breast as two diffuse and indolent tumefactions in the mammary glands during pregnancy, reddish blue, with an apparent venous reticulum, being of hard elastic consistency and adhering to the skin and its substrata, with precocious metastatic spread by the lymphatic route and the blood stream. Clinically the disease must be differentiated from gravidic hypertrophy and from acute breast cancer (carcinomatous mastitis). Hypertrophy of pregnancy is excluded by the rapidity of its evolution and by the presence of glandular engorgements. Carcinomatous mastitis is excluded

by the lack of pronounced inflammatory symptoms. Small round cell sarcoma is not likely to be confused clinically with the disease, whereas microscopically the sarcoma is similar to the lymphoblastoma and is distinguished from it only because it contains a single type of cells, similar to the lymphocyte, and capable of reproduction. In the lymphoblastoma, besides the lymphocytes and mature cells, there are also found lymphoblasts and immature cells, often in the stage of mitosis.

Prensa Médica Argentina, Buenos Aires

18: 1523-1574 (April 20) 1932

Delmas Method in Labor. J. C. Lascano.—p. 1523.
*Alterations of Electrocardiogram in Mitral Stenosis. A. Battro.—p. 1532.
*Serologic Reactions for Diagnosis of Syphilis: Influence of Hydrogen Ion Concentration of Medium. C. L. Ducco.—p. 1552.
Increase of Physical Resistance by Administration of Minute Doses of Metals. F. Schreiber and B. Villinger.—p. 1559.
Relation of Cardiovascular System and Endocrinology. P. M. Barlaro.—p. 1566.

Alterations of Electrocardiogram in Mitral Stenosis.—Battro studied the variations in the electrocardiogram in sixty-four cases of mitral stenosis. From his observations he reaches the following conclusions: The modifications of the auricular P complex are of capital importance in the diagnosis and prognosis of mitral stenosis. The signs of hyperactivity or hypertrophy of the auricle are manifested in the electrocardiogram by increased height of the P wave, and by increased amplitude of its base, above 0.10 second. The P wave in these cases may or may not have notches, bifidity or reduplication. A diminished elevation of the P wave (under 1 mm. of height) is an obvious indication of a lessened contractile energy of the auricular myocardium, during the evolution of mitral stenosis. A short P wave coincides frequently with the onset of cardiac insufficiency or precedes the appearance of auricular fibrillation. A short P wave has sometimes a long duration, 0.12 second. The improvement of the clinical condition coincides with a new increase in the height of the P wave, although the amplitude of its base does not return to normal but continues wider than normal for some time, owing to the persistence of a slight degree of auricular dilatation. In cases of mitral stenosis with total compensation, the T wave is large, being from 5 to 6 mm. in height. Reversed T wave and reversed RT segment were observed in thirteen cases in the group of the author's patients. Eight times a reversed T wave was observed in leads 2 and 3 (61 per cent) and in a case of mitral stenosis with arterial hypertension there was a reversed T wave in leads 1 and 2. The inversion of the T wave in leads 2 and 3 appeared in the author's cases after a crisis of auricular fibrillary flutter and was interpreted as having been caused by an overcharge on the right ventricle. The predominant strain of the right ventricle does not appear constantly in the electrocardiogram. The largest rate of predominant strain of the right ventricle is given by cases showing fibrillation (80 per cent), and by cases showing a manifest decompensation. Mitral stenosis with fibrillation and without predominant strain of the right heart point out the coexistence of aortic insufficiency. The transformation of a single predominant strain of the right ventricle into partial left bundle-branch block (a transitional form between left bundle-branch block and preponderant strain of the right ventricle) coincides with the clinical improvement. The transformation is caused by an exaggerated increase of the potential of the right ventricle. The presence of preponderant strain of the left ventricle associated with mitral stenosis points out the coexistence of aortic insufficiency, aortitis, uremia, goitrigenous mitral pseudostenosis or some other similar lesions. The rhythmic disturbances most frequently observed in mitral stenosis are simple sinus arrhythmia of a vagal origin, respiratory arrhythmia, simple sinus tachycardia, auricular extrasystole, auricular paroxysmal tachycardia, auricular fibrillation with flutter and ventricular extrasystole. All the rhythmic disturbances mentioned, with the sole exception of ventricular extrasystole, are manifestations of either sino-auricular or auricular increased excitability caused by myocardial lesions located in the auricular walls.

Serologic Reactions for Diagnosis of Syphilis.—Ducco subjected the blood serum of normal and syphilitic persons to some experiments related with the flocculation test for the serodiagnosis of syphilis. He concludes that the blood serum of syphilitic persons contains an albumin or albuminoid which does not exist in the blood serum of normal persons. The syphilitic albumin produces a lecithin-albuminoid which is precipitated itself, under certain circumstances. The iso-electric hydrogen ion concentration (iso-electric point) of the syphilitic albumin is 7.9. Flocculation tests (and probably the Wassermann test also) aim to detect the presence of this albuminoid in the serum under examination. The nearest to 7.9 the hydrogen ion concentration of the medium (antigen emulsion) by means of which the determination of the syphilitic albumin is made, the most sensitive the method and the most exact the results obtained. The author advises the use of the following antigen and technic: As normal antigen the following should be used: chemically pure lecithin, 0.5 Gm.; cholesterol, 0.7 Gm.; alcohol, 100 cc. The emulsion of the antigen is made up with four volumes of distilled water and one volume of the antigen. The water is poured into an Erlenmeyer flask and the antigen is added drop by drop while the flask is continuously shaken. A normal solution of sodium citrate is prepared separately, thus: pure citric acid, 70 Gm.; distilled water, 500 cc., and ten drops of a 1 per cent alcoholic solution of phenolphthalein. This is dissolved and to it is added some concentrated solution of sodium hydroxide, in sufficient amount to bring the solution to the initial point of coloration with the phenolphthalein. As it is indispensable that the solution has a hydrogen ion concentration not beyond 8.5, as soon as the initial point of coloration with the phenolphthalein appears one should add a weak solution of citric acid, drop by drop, until the red hue of the phenolphthalein is slightly perceptible. The solution is allowed to cool and distilled water is added to make a volume of 1,000 cc. To this solution is added 1 or 2 cc. of chloroform to avoid any possible contamination by molds or bacteria. The following amounts are necessary to perform the test: blood serum, 1 cc.; suspension of the antigen at one-fifth concentration, 1 cc.; normal solution of sodium citrate, 1 cc. The mixture is kept at 37 C. and turbidity is observed in the liquid (in which flocculation has taken place) in a photometer or in a spectrophotometer. One subtracts from the reading of the density obtained the density of a control test made with the same technic as that used in the test, but by using distilled water in place of the antigen emulsion. By this technic a reaction of flocculation with tendency to conglomeration is obtained. Between the optic density obtained by this test (which density was estimated with Crova's polarization spectrophotometer) and the Wassermann test (which was performed according to the technic of Bauer and Hoecht, with inactivated serum and normal antigen at a concentration of 9 to 1), the following correlation in the results was observed: From 0 to 0.10 in the scale of the optic density, no Wassermann reaction was observed; from 0.10 to 0.20, one fourth in the intensity of the Wassermann reaction; from 0.20 to 0.30, one half intensity; from 0.30 to 0.45, three fourths, and more than 0.45, entire intensity of the Wassermann reaction.

Archiv für Hygiene und Bakteriologie, Munich

107: 243-396 (Feb. and March) 1932

English Sweat and Sudamina in Russia. H. Zeiss.—p. 243.
*Relations Between Carbohydrate Metabolism and Experimental Staphylococcus Infection in Rabbits. H. C. Fetzer.—p. 255.
Influence of Emulsification of Disinfectant on Bactericidal Action. W. Rimpau, E. Plochmann and G. Schneider.—p. 268.
Necessity of Bacteriologic Control of Employees in Water Works. K. Herzberg.—p. 277.
*Metabolic Changes During Chronic Carbon Monoxide Inhalation. H. Reploh.—p. 283.
Influence of Cultivation Temperature on Morphology and Rapidity of Growth of Bacterium Coli. A. Seiser.—p. 290.
Determination of Pathogenicity of Streptococci Strains of Infected Cow's Milk for Human Beings. J. Hökl, G. Petrov and A. Krejči.—p. 309.
Experimental Studies on Chronic Carbon Monoxide Poisoning. W. Boedicker.—p. 318.
Bactericidal Constituents of Bacillus Pyocyaneus and Bacillus Prodigiosus. H. O. Hettche.—p. 337.
Electrical Conduction Capacity an Aid for Chemical and Hygienic Evaluation of Milk. A. Schweers.—p. 354.

Relations Between Carbohydrate Metabolism and Experimental Staphylococcus Infection in Rabbits.—Fetzer administered to rabbits for twelve days, twice daily, 10 Gm. of dextrose by means of the stomach tube. On the

fifth day of the experiment these animals as well as several control animals were infected with a culture of hemolytic, yellow staphylococci. It was the author's object to determine (1) what influence the alimentary hyperglycemia exerts on the spreading of a staphylococcus infection, and (2) the behavior of the glycogen content of the liver under the influence of the alimentary hyperglycemia and of the staphylococcus infection. On investigating the first problem he found that, whereas the control animals showed only a comparatively slight infection, in the animals that received the dextrose the infection was much more extensive. The author thinks that this is due to the increased sugar content of blood and tissues, which favors the growth and the spread of the staphylococci. To another group of animals a larger dose of infectious material was administered. To this severe infection the dextrose animals showed a greater resistance, for they survived, whereas the control animals died less than twelve hours following the infection. In order to determine the behavior of the glycogen content of the liver, a new group of animals was infected with staphylococci. It was found that in the animals that had been treated with dextrose the glycogen content was reduced to about one fourth of the normal, whereas in the controls it was reduced to one tenth. This shows that the toxins of the staphylococci reduce the glycogen content of the liver. The author thinks that the increased resistance of the dextrose animals against the toxins of the staphylococci may perhaps be due to their greater glycogen reserves, and he suggests that this may explain the good results obtained in toxic and infectious complications following administration of dextrose.

Metabolic Changes During Chronic Carbon Monoxide Inhalation.—Reploh made metabolic studies on rabbits that from six to twelve months were exposed daily to small quantities of carbon monoxide. In comparison with normal animals, the animals that had been exposed to carbon monoxide showed a considerably increased oxygen consumption, a slightly increased carbon dioxide elimination and a decreased respiratory quotient. Because the author's observations were similar to those made by Peisachowitsch, who investigated the changes in the incretory glands during carbon monoxide poisoning, he concludes that the metabolic changes are the result of changes in the incretory glands. Peisachowitsch noted changes particularly in the chromaffin tissues, in the suprarenal medulla and in the thyroid. The clinical value of his studies the author sees in the possibility to confirm the diagnosis of disorders caused by chronic carbon monoxide inhalation, by means of metabolic tests, and he thinks that such conditions may perhaps be treated by influencing the incretory glands.

Beih. z. Arch. f. Schiffs- u. Tropen-Hygiene, Leipzig

36: 1-36 (No. 2) 1932

*Relations Between Frambesia and Syphilis. O. Schöbl and C. M. Hasselmann.—p. 5.

Relations Between Frambesia and Syphilis.—Schöbl and Hasselmann consider the study of frambesia and of the interrelation between frambesia and syphilis of great significance because Spirochaeta pertenuis, the pathogenic organism of frambesia, is identical with Spirochaeta pallida, the pathogenic organism of syphilis, in regard to morphology, staining and culture. The main difference between the two types of spirochetes is in their biologic behavior in the body tissues. The pathogenic organism of frambesia is ectodermotropic; that is, it has an especial affinity for the external layers of the skin. The pathogenic organism of syphilis, however, affects all organs, but it shows a particular affinity for the mesodermal tissues and therefore can be considered as mesodermotropic. This difference in tropism explains the differences in the pathologic changes and immunizing behavior, and thus also the differences in the clinical course and in the epidemiology of the two diseases, as well as the fact that one disease attacks primarily certain age groups, and, finally, hereditary and congenital infections in syphilis and their absence in frambesia. The largest portion of the treatise consists of a report on studies of the immunity conditions. In it is discussed the relations between serologic changes and immunity, homologous and heterologous immunity, a new method for testing immunity to spirochetes and its advantages in studies on frambesia and syphilis, the duration of immunity, the influence of chemotherapy on immunity, and the biologic cure. It is emphasized that frambesia should not be designated as tropical syphilis, and it is also pointed out that the two diseases may concur. The possibility is considered whether perhaps the use of vaccines may be an aid to chemotherapy and may perhaps increase the immunity in those who have been treated during the early stages, and thus prevent reinfection.

Beiträge zur Klinik der Tuberkulose, Berlin

79: 665-786 (April 21) 1932

Increase in Virulence of Calmette Bacillus. H. Much and A. Haim.—p. 665.
*Morphologic Modifiability of Tubercle Bacillus in Culture. P. Kallós.—p. 688.
*Significance of Hematogenic Dissemination for Tuberculosis of Upper Portion of Lung in Children and in Young Persons. H. Starcke.—p. 691.
Etiologic Diagnosis of Pulmonary Tuberculosis During Childhood. G. W. Schmidt.—p. 713.
*Diagnosis of Open Pulmonary Tuberculosis in Nurslings and Children. T. Baumann.—p. 717.
Possibility of Cure in Miliary Tuberculosis. K. Schlapper.—p. 724.
Tuberculous Spondylitis: Observations on Cases Observed from 1912 to 1930. M. Reinhart.—p. 745.
Pulmonary Tuberculosis and Syphilis. H. Schlesinger.—p. 750.
Welfare Work for Tuberculous Patients and Decrease in Tuberculosis Mortality. H. Reploh.—p. 761.
Simultaneous Occurrence of Tuberculosis and Pernicious Anemia. E. Karlmark and T. Olovson.—p. 772.
Technical Improvements in Production of Oleothorax and in Irrigation of Pleura. G. F. Bume.—p. 782.

Morphologic Modifiability of Tubercle Bacillus.—Kallós shows that a changed culture medium is capable of modifying the morphologic characteristics of the tubercle bacillus considerably. When oil was used in the culture medium he noted in the oil layer numerous peculiar forms; namely, unusually long, threadlike, acid-fast and alcohol-fast bacilli. Of 100 bacilli in the oil layer, 58 were longer than the average length that was noted in the cultures before oil was used. These unusually long bacilli were either straight or curved and showed an intense, partly homogeneous and partly granular coloration. The oil culture also contained numerous delicate, granular and some terminally branched bacilli. Gram staining revealed the described forms to be gram positive, but some showed gram-negative granulation or deposits. The author also noted some free, gram-negative granules, some of which appeared in chain-like arrangements. The bacilli that were found in the funnel-shaped downward projections from the top layer and also those found in the bottom sediment were morphologically normal. However, some of them showed marked granulation. Tests of the virulence on guinea-pigs revealed that the bacilli in the oil layer as well as those in the downward projections and in the deeper portions of the culture were fully virulent.

Hematogenic Dissemination of Tuberculosis.—Starcke is convinced that hematogenic dissemination is the main form in which tuberculosis spreads among children and young persons, for he observed it in 50.5 per cent of the cases. In over 40 per cent he noted apical foci. He does not think that hematogenic early apical foci justify a more favorable prognosis than late apical foci. They are sometimes impossible to differentiate, and tuberculosis can spread from either of them to other parts of the lung, particularly when open caverns are present. Open caverns at the apex are not as rare as is commonly assumed. More significant than the differentiation between early and late hematogenic apical caverns is the differentiation between active and inactive disseminating foci. Early and late disseminations are prognostically equivalent, for even old, inactive apical foci may be the cause of further dissemination of pulmonary tuberculosis. Disseminations that are limited to the upper field have a doubtful prognosis, and pneumothorax treatment should therefore not be postponed. Phrenic exeresis does not prevent the formation of open cavities.

Diagnosis of Open Pulmonary Tuberculosis in Children.—Baumann emphasizes that the negative outcome of the direct examination of the sputum or of the feces either in smears or in antiformin preparations is not sufficient to exclude an open tuberculosis. He observed that the majority of cases of open tuberculosis (79 per cent of his material) can be detected only by the animal experiment. He is convinced that even those children in whom the tubercle bacilli are demon-

strable only in the animal experiment are a menace to their surroundings. Accordingly he advises that, before a tuberculous child is discharged from the hospital or sanatorium, several animal experiments should be made.

Deutsche Zeitschrift für Chirurgie, Berlin

235: 681-825 (April 26) 1932

*Studies on Postoperative Shock. W. Ewig and L. Klotz.—p. 681.
Erysipeloid: Observations During Twenty-Five Years. E. Pawlowski.—p. 711.
Changes in Lung Following Closure of Branches of Pulmonary Artery by Embolus and Ligation. C. M. van Allen, G. B. Nicoll and W. M. Tuttle.—p. 724.
*Experiences with Paraffin Filling in Pulmonary Tuberculosis. A. Winternitz.—p. 752.
Mural Thrombus of Aorta as Cause of Multiple Arterial Embolisms of Greater Circulation. M. Marcus.—p. 766.
Thrombosis of Right External Iliac Artery with Embolism of Femoral Artery Following Appendectomy. M. Siebner.—p. 770.
Management of Cystic Duct in Subserous Cholecystectomy Without Drainage: Technic for Suturing of Dilated Stump of Cystic Duct. P. L. Mirizzi and F. A. Olmedo.—p. 775.
Actinomycosis of Stomach. L. Zukschwerdt and T. Eck.—p. 782.
When Is Resection of Duodenal Ulcer an Operation of Choice? A. Plenk.—p. 785.
Gastroscopic Observations. P. N. Napalkow.—p. 789.
Clinical Aspects and Pathogenesis of Torsion of Omentum. A. Henrichsen.—p. 794.
Clinical Aspects of Hematogenic Tuberculosis of Muscles. H. Hanke.—p. 801.
Casuistics of Patella Cubiti. I. Odessky and L. Melnikowa.—p. 807.
Aspects of Oligodynamic Action of Metals. W. M. Kreiner.—p. 809.
Treatment of Tetanus with "Avertin." G. Loewe.—p. 814.

Studies on Postoperative Shock.—Ewig and Klotz differentiate two types of postoperative shock, a compensated and a decompensated form. The compensated form, besides having the typical general aspects, is also characterized by a greater or lesser increase in the quantity of the circulating blood, by a constant or increased venous pressure while the veins are well filled, by unchanged or slightly increased arterial pressure, and by only slightly accelerated heart action. Signs of vascular insufficiency are absent. The further postoperative course is favorable. If other complications are absent, therapeutic interventions are unnecessary. Decompensated postoperative shock resembles the clinical aspects of collapse with reduction of the circulating quantity of blood, reduction in arterial and venous pressure, emptiness of veins, and considerable acceleration of the pulse. In the treatment of this form of postoperative shock, inhalation of carbon dioxide and intravenous continuous drop infusion of a dextrose solution are most effective. Neither the extent of the intervention nor the type of anesthesia can be considered as alone responsible for the development of compensated or decompensated postoperative shock. Contrary to their expectations, the authors observed compensated shock especially often following serious interventions on the stomach in ether anesthesia. Whereas the postoperative increase in the circulating blood is primarily due to evacuation of the depots, the reduction of the quantity of the circulating blood is only partially due to the stasis of larger quantities of blood in the splanchnic region or to filling of the depots, for it is partly due to loss of plasma. Of the anesthetics, "avertin" has the most unfavorable effect on the peripheral circulation. When "avertin" is used there is always immediately after the operation a more or less decompensated shock.

Experiences with Paraffin Filling in Pulmonary Tuberculosis.—Winternitz reviews his experiences with paraffin filling of the lung. Because his time of observation is comparatively short, he does not consider his results as final. After-examination of seventy-nine patients showed 32 per cent to be free from bacilli and able to work. The author thinks that in spite of its disadvantages the paraffin filling should not be entirely abandoned, but he demands that its use be limited to cases that are suitable in every respect. It should be employed only in apical caverns that are not lower than the infraclavicular region, and the remaining portions of the lung should be unimpaired. The filling should not be in excess of from 300 to 500 cc. The paraffin filling can be resorted to also in caverns that remain after thoracoplasty and in bilateral apical caverns, provided the lower parts of the lung are unimpaired. The author considers it a matter of course to resort to paraffin filling only after pneumothorax and phrenicotomy have been unsuccessful. He is convinced that if paraffin filling is resorted to within these strictly defined limits, it will give good results and will no longer deserve an unfavorable reputation. He thinks that efforts should be made to replace paraffin by a more suitable material.

Klinische Wochenschrift, Berlin

11: 753-792 (April 30) 1932. Partial Index

Development and Present Status of Research on Yellow Fever. W. Schüffner.—p. 753.
Formation of Urea in Animal Organism. H. A. Krebs and K. Henseleit.—p. 757.
Bromine Content of Hypophysis and Its Relation to Age. H. Zondek and A. Bier.—p. 759.
Hypophysis and Sleep. H. Zondek and A. Bier.—p. 760.
*Mineral and Lipoid Constituents of Blood Serum in Essential Hypertension. L. Wacker and C. Fahrig.—p. 762.
Experimental Investigations on Intestinal Autointoxication. W. Tönnis and H. Horster.—p. 766.
Elastometric Investigations on Athletes. A. Arnold and H. Wunderlich.—p. 768.
Intragastric Electrochemical Registration of Fluctuations of Gastric Acidity. L. Dinkin and H. Taterka.—p. 770.
Practical Value of Fractional Method for Study of Mechanism of Gastric Function. O. J. Vándorfy.—p. 772.
Registration of Acidity Fluctuations in Stomach by Electrochemical Method Without Withdrawal. C. Funck.—p. 773.
New Method for Serologic Demonstration of Cancer Antibodies in Cancer Patients. H. Lehmann-Facius.—p. 775.
Do Sex Hormones Act Directly on Secondary Sex Organs or Only by Way of Hypophysis? J. Freud.—p. 776.
*Raw Cotton as Cause of Bronchial Asthma. J. Herms.—p. 777.

Mineral and Lipoid Constituents of Blood Serum.—In twelve patients with essential hypertension and in nineteen healthy persons, Wacker and Fahrig studied the content of the blood serum in sodium, potassium, calcium, magnesium, chlorine, rhodan and the composition of the lipoid complex. It was found that when the physiologic reduction of the calcium content in older persons is taken into consideration, the calcium content is not reduced during essential hypertension, and the potassium content is not increased. Moreover, the quantitative determination of the calcium content gives no indications about the quantity of the ionized portion of calcium. The magnesium content of the serum of patients with hypertension is somewhat increased; however, the chlorine content is not increased. The sodium and rhodan contents are not changed during hypertension; in smokers the rhodan content was somewhat increased. The total cholesterol content of the blood serum was increased in 75 per cent of the patients with essential hypertension. But in spite of the frequent concurrence of hypercholesteremia and essential hypertension, the increase in the cholesterol content cannot be considered as the immediate cause of increased blood pressure. Hypercholesteremia is only a partial manifestation of hyperlipoidemia. The lipoid complex is made up primarily of phosphatides (computed as lecithin), cholesterol esters, neutral fat and free cholesterol. If the tests are made during rest and while the patients are fasting, the neutral fat does not take the first but third place, and it amounts to less than one fourth of the total lipoid content. The increase in the various portions of the lipoid complex during essential hypertension is such that the physiologic ratio is preserved.

Raw Cotton as Cause of Bronchial Asthma.—Herms relates the clinical history of a man, aged 38, whose occupation necessitated the testing of samples of raw cotton. For more than eight years he had had respiratory disturbances such as coughing and shortness of breath whenever he came in contact with cotton from Peru. During the last six months asthma-like attacks developed, even when he was away from his work, but when testing cotton from Peru the disturbance became almost unbearable. The anamnesis revealed that the patient's mother had suffered from asthmatic attacks after eating fruits. The skin allergy of the patient was tested with extracts of various types of cotton. The test with cotton from Peru gave a strongly positive reaction, whereas tests with other types of cotton gave much weaker reactions, and control tests with physiologic solution of sodium chloride and with a peptone solution were negative. The patient was subjected to an antiallergic therapy by subcutaneous injections of extract from Peru cotton. After the treatment was completed, contact with the Peru cotton no longer caused asthmatic symptoms and the patient's general condition was likewise improved. Following this report of the case history, the author discusses on the

basis of this case the principal postulates for the diagnosis of allergic bronchial asthma. He also shows that similar disorders of the respiratory organs in cotton workers usually prove on closer investigation to be not an allergic disease but probably of parasitic origin.

Zentralblatt für Gynäkologie, Leipzig

56: 1137-1200 (May 7) 1932

Real Significance of Menopause on Background of Life. H. Sellheim. —p. 1138.
Report on Cancer Inquiry in Rhenish-Westphalian Society for Gynecology and Obstetrics. K. Frankenstein.—p. 1143.
*New Theory on Development of Endometrioid Heterotopias. E. Tonkes. —p. 1151.
Skin as Hormone Carrier in Pregnancy. A. Loeser.—p. 1155.
*Therapy of Essential Thrombopenia. W. Schaefer.—p. 1158.
Antique and Modern Obstetrics and Gynecology in India. S. Mitra. —p. 1166.
Application of Fritsch's Fundal Section in Cesarean Operations. R. Spoerl.—p. 1178.

Development of Endometrioid Heterotopias. — Tonkes agrees with De Snoo, who, convinced that the sero-epithelial theory was not a satisfactory explanation, expressed the opinion that endometrioses develop from tissues that during the embryonal period are close to the site of Müller's ducts. The author made microscopic studies in cases of endometriosis and found that these proliferations resemble endometrium physiologically as well as morphologically. In many of the ectopic endometrial proliferations the lymph nodes as well as the stroma showed changes that are known to occur in the uterine mucous membrane, and which are considered as physiologic menstrual changes. The author also cites clinical observations that corroborate this theory of the endometrioid heterotopias. After evaluating various theories of pathogenesis and showing their shortcomings, he discusses his own theory. He thinks that endometrioses develop from tissues which during the embryonal stage develop into the genital system, and which persist in the undifferentiated stage into later life and under the influence of especial impulses they may yet become differentiated into endometrium.

Therapy of Essential Thrombopenia.—Schaefer evaluates three therapeutic procedures that have been recommended for the treatment of essential thrombopenia; namely, blood transfusion, extirpation of the spleen and irradiation of the spleen. Since extirpation of the spleen involves the danger of a fatal outcome and also because it occasionally does not have the desired effect, the author thinks that removal of the spleen is advisable only if all other measures, particularly blood transfusion and roentgen irradiation of the spleen, have failed. He illustrates this by a case report and shows that irradiation of the spleen with large doses can replace splenectomy.

Laboratornaya Praktika, Moscow

8: 1-40, 1932. Partial Index

*Culture Medium from Soy Bean. D. S. Kostriko and Ts. Kh. Maryash. —p. 10.
*Soy Bean Medium for Bacterial Counts. A. Zaslavskiy and E. Berger. —p. 11.
*Weil-Felix Reaction in Normal Individuals and in Patients with Typhus Fever. I. I. Kamenetskiy, P. F. Donovskaya and A. A. Konstantinova.—p. 12.

Culture Medium from Soy Bean.—Kostriko and Maryash describe three modifications in the preparation of soy bean medium: 1. A soy bean extract is prepared by adding 100 Gm. of soy beans to 1 liter of water, boiling from thirty minutes to one hour, filtering, and sterilizing by autoclaving twenty minutes at 120 C. 2. Several soy beans (eight or ten) are added to a test tube with water and sterilized like the extract. 3. Soy bean agar is prepared by adding from 1.5 to 2 per cent agar to the extract and sterilizing. These mediums were found efficacious for the culture of most pathogenic bacteria, and the growth was better and faster on this medium compared with the ordinary culture mediums. Many milk-acidifying organisms not growing on the ordinary mediums were cultivated on the soy bean medium. It was found that the second medium was especially suitable for the cultivation of anaerobes without addition of other substances. Yeasts also grew on this medium. Although most strains of staphylococci and streptococci grew on this medium, further study was recommended. The chemical composition of the soy bean was found to consist of 34 per cent protein, 16.8 per cent fat, 33.7 per cent carbohydrates, 4.7 per cent ash and 10.8 per cent water. The authors conclude that soy bean broth and agar may be substituted for meat-peptone broth and agar in many cases; that unfiltered soy bean medium may serve for the cultivation and isolation of anaerobes, and that this medium may be used for microbiologic control in canning industries.

Soy Bean Medium for Bacterial Counts.—In their effort to find an easily obtainable and inexpensive culture medium, Zaslavskiy and Berger chose the soy bean medium recommended by Kostriko and Maryash. Various waters from the fields around Odessa were plated on soy bean agar (with proper reaction) and also on the usual meat-peptone agar and examined after forty-eight hours' incubation in the thermostat. The authors conclude that the soy bean medium is just as efficient and may be substituted for the meat-peptone mediums in water analysis of the bacteriologic laboratory. The preparation of this medium is much easier and on the whole less expensive.

Weil-Felix Reaction in Normal Individuals and in Patients with Typhus Fever. — Kamenetskiy and his co-workers state that the Weil-Felix reaction for typhus fever appears in a very small percentage of the patients at the onset of the disease before the exanthem; the number of positive reactions increases from the eighth to the ninth day and reaches 100 per cent at the termination of the disease and remains at a high titer in many patients afterward. These facts must be recognized during the time of epidemics when it is so necessary to isolate persons with early forms of the disease. No real significance can be attributed to a reaction with a titer of less than 1 to 200. The Weil-Felix reaction was negative in 100 school children whereas 178 adults, who reported never having had typhus fever, had slight reactions in 3 per cent of the cases. Among 150 patients with clinical typhus fever, only eight had Weil-Felix reactions with a titer of 1 to 200; the rest had much higher titers (1:400 to 1:3,200). The authors suggest that whenever examinations are negative, especially when the blood was drawn before the seventh or eighth day of the disease, the Weil-Felix reaction should again be examined in two or three days. In 134 clinical cases of typhoid, the Weil-Felix reaction was positive in 2 per cent; while in a group of 150 patients with typhus fever, the Widal reaction was positive in titers of from 1 to 100 to 1 to 400 in 22 per cent and in a titer of 1 to 1,600 in 2 per cent of the patients. The Widal reaction was examined with Bacillus typhosus, Bacillus paratyphosus A and B and N_8; the Weil-Felix reaction was never examined with less than two strains of Bacillus proteus X 19 (in some with four strains).

Bibliotek for Læger, Copenhagen

124: 115-153 (April) 1932

*Blood Sugar Threshold in Diabetic Persons. K. Faber and J. E. Holst. —p. 115.
Height of Rise of Blood Sugar After Administration of Dextrose in Diabetes Mellitus and in Nondiabetic Persons. J. E. Holst.—p. 135.

Blood Sugar Threshold in Diabetic Persons.—Faber and Holst emphasize the importance of knowledge of the blood sugar threshold for the evaluation of glycosuria both in diabetic and in nondiabetic persons. They show that while the blood sugar threshold differs in different persons it continues unchanged in the same person, whether normal or diabetic, although it may be affected by certain conditions such as gravidity.

Ugeskrift for Læger, Copenhagen

94: 429-458 (April 28) 1932

Ambulant Neurologic Therapy. P. Levison.—p. 429.
Invalidity After Severing of Tendons of Hand. S. Klær.—p. 432.
*Leukemia in Denmark. H. C. Gram and R. Nielsen.—p. 437.
Prevention of Gonorrhea. K. Philipsen.—p. 443.

Leukemia in Denmark.—Gram and Nielsen find that the annual mortality from leukemia in Denmark is 18 per million of population. It is somewhat lower in rural (16) than in urban districts (20). The authors conclude that the disease seems to affect the working class somewhat more than other classes.